THE INCORPORATION OF SURGEONS AND MEDICAL EDUCATION AND PRACTICE IN EDINBURGH 1696-1755

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Traditional historiography of the Edinburgh Medical School identifies its origins with the university and accounts for its success in terms of the application of the model of medical education established at Leiden University. This thesis proposes that such a focus imposes limitations to an understanding of the reasons for the dynamic nature of medical teaching at Edinburgh and the nature of the medical culture there, and instead argues that the presence of a medical craft incorporation--the Incorporation of Surgeons of Edinburgh--which was strong politically and highly motivated culturally, was a highly significant factor in the development of the Edinburgh Medical School. The thesis describes events leading to the development of the Medical School and discusses the distinctive medical culture they produced.

The dates circumscribing the thesis highlight achievements of the principal protagonists. The year 1696 marks the point at which the Incorporation of Surgeons achieved its greatest political power in Edinburgh. Subsequently, the faculty of medicine in the University of Edinburgh and the Royal Infirmary were established, proposing a medical culture with different priorities. In 1755 William Cullen, formerly Professor of Medicine at Glasgow University, was appointed to the chair of Chemistry in the University of Edinburgh. During his long tenure at Edinburgh (1755-1789), Cullen gave systematic articulation to medical ideas in all probability formulated in the 1730's, which bore all the marks of the medical culture identified with the Incorporation of Surgeons. The date of his introduction to Edinburgh--1755--has been chosen, therefore, as marking a point of qualitative change in the content of medical education in Edinburgh, when the medical culture of the previous period became absorbed into the teaching of the new medical institution. As such, it is a marking point but not a boundary line, a date signalling transition and a reference point to which the medical culture of the Incorporation of Surgeons and the new teaching introduced into the Edinburgh Medical School by William Cullen can be related.

This thesis is entirely my own work and is based upon research conducted by no-one but myself.

Name

Date August 13 1984

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"The two branches of science that are studied with the greatest ardour in Edinburgh, are metaphysics and medicine."

/T. Newte/ A Tour of England and Scotland in 1785 (London, 1788) p. 325.

INTRODUCTION

The development of the Edinburgh Medical School in the eighteenth century was an historical event which had no parallel in Britain. By the late eighteenth century, Edinburgh was the mecca to which all serious students of medicine--not only from Scotland but England, Ireland and North America too--made their pilgrimage. Its success is sometimes explained in negative terms: students went to Edinburgh because religious tests barred them from Oxford and Cambridge. The justice of this claim is doubtful. Even if they had had the opportunity, it is debatable how many would have chosen the English universities. They went to Edinburgh to study medicine; nowhere else in Britain was tuition in the subject offered on so extensive a basis. Other cities in Britain--Manchester and Birmingham come immediately to mind--had thriving scientific communities by the second half of the eighteenth century, with medical men in conspicuous presence. Only in Edinburgh had such a community developed within a pedagogic framework. In part, therefore, this thesis will be asking how and why the Edinburgh medical community developed in this singular direction.

Teaching in the eighteenth century was a vocation in the strict sense of the word. To recognize, therefore, that the Edinburgh medical community had a pedagogic purpose immediately raises another question--what did they wish to teach? The answer would appear to be self-evident: they obviously wished to transmit medical information to students. However, as I have outlined in chapters seven and eight, the lectures of William Cullen, who was medical professor at Edinburgh from the early 1750's, presented medical information which essentially underwrit a code of social ethics. Within the British Isles, in Edinburgh alone was medical theory used so confidently to convey moral principles. This thesis, therefore, will also be concerned to examine this circumstance more closely.

Before these questions can begin to be answered, the historiographical accretions of the past have to be peeled away, because in the natural process of building the past in its own image, previous historiography has created a focus no longer wholly acceptable. Contemporaries and near contemporaries, recognizing the singularity of Edinburgh's medical school, offered explanations which provide part, but only part, of the truth. To Adam Smith, the medical professors taught because they had an economic incentive to do so.[1] To medical teachers and practitioners

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[1]Adam Smith An Inquiry into the Nature and Causes of the Wealth of Nations with intro. by J.R. M'Culloch, Edin. 1863, pp. 341-52.

in the 1820's, looking back wistfully to the heydays of the late eighteenth century from a present of declining prestige and falling enrolments, the secret lay in the charisma and personal energies of individual professors.[2]

From the middle of the nineteenth century, historiographical questions shifted the focus of attention. Medicine at Edinburgh had become so established that historians no longer enquired into the reasons for its success. With medical education firmly established within the university community by the Scottish Universities Act of 1858, the year 1726, when the university acquired its own medical faculty, was located as the effective date from which all things began to happen. The evolution of medical teaching at Edinburgh was thus firmly linked to the development of the university, the two major histories of that institution, by Bower in 1817 and Grant in 1884, being taken as the authoritative versions of the rise of medical education in Edinburgh.[3] Ancillary to these standard histories, representatives of the College of Physicians and the College of Surgeons made their contributions. Beilby (1830's) and more particularly Peel-Ritchie (1890's) elaborated upon the establishment of the College

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[2] P.P. 1837/XXXV Evidence, Oral and Documentary taken by . . . the Commissioners . . . for Visiting the Universities of Scotland Vol. I University of Edinburgh Lond. 1837, pp. 447-48.

[3] Alexander Bower History of the University of Edinburgh 3 vols. Edin. 1817; Sir Alexander Grant The Story of the University of Edinburgh during its First Three Hundred Years Lond. 1884.

of Physicians in 1681 and its influence upon later developments in the university, while Struthers (1860's), Gairdner (1860's), Cathcart (1882), Cresswell (1914) and Miles (1918) examined, usually in a somewhat circumspect, faintly guarded and even almost apologetic way, the role played by the Incorporation of Surgeons, established in 1505, to the development of medical teaching in Edinburgh.[4]

Working from this basis of historical scholarship, for much of the twentieth century the history of medicine in Edinburgh focussed upon these institutional developments, but the question of "why" again was raised. Taking their cue from the belief in the universality of scientific thought and noting the large numbers of Scotsmen travelling to Leiden between 1650 and 1750, historians have drawn parallels between the kind of medical instruction and clinical training made so popular by Herman Boerhaave from

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[4] Wm. Beilby History of the Royal College of Physicians of Edinburgh; Address given at opening of their new Hall Nov. 26 1833; R.P. Ritchie The Early Days of the Royall Colledge of Phisitians, Edinburgh Edin; 1899; John Struthers Historical Sketch of the Edinburgh Anatomical School Edin. 1867; John Gairdner Historical Sketch of the Royal College of Surgeons of Edinburgh Edin. 1860; John Gairdner Sketch of the Early History of the Medical Profession in Edinburgh Edin. 1864; C. Cathcart "Some of the Older Schools of Anatomy connected with the Royal College of Surgeons" Edin. Med. Jour. Mar. 1882; C.H. Cresswell "The Incorp. of Surgeons of Edinburgh; Their Early Association with the Royal Infirmary" Edin. Med. Jour. Oct. 1913; C.H. Cresswell, "The Royal College of Surgeons of Edinburgh - Anatomy in the Early Days" Edin. Med. Jour. Feb. 1914; C.H. Cresswell, "The Royal College of Surgeons of Edinburgh; Their Professors of Surgery" Edin. Med. Jour. June 1914; C.H. Cresswell The Royal College of Surgeons of Edinburgh Edin. 1918; Alex. Miles The Edinburgh School of Surgery Before Lister Edin. 1918.

1701 until his death in 1738 and the eventual form which medical education took in Edinburgh.[5]

In recent years, however, historiography in general has been transformed by a more sociological interpretation of the past, resulting in a shift of emphasis away from preoccupation with political--and in the case of Scotland theological--developments, towards a more general interest in social, economic and cultural life generally.[6] Topics which in the past would have been identified as the concern of "intellectual" historians--for example, the history of cultural, philosophical, scientific and theological developments--are being discussed by historians with a greater awareness of the social and economic variables

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[5]See, for example, D. Guthrie The Medical School of Edinburgh Edin. 1959; D. Guthrie "The Influence of the Leyden School upon Scottish Medicine" Medical History 3 (1959) pp. 108-22; E. Ashworth Underwood Boerhaave's Men at Leyden and After Edin. 1977; A. Logan Turner The Story of a Great Hospital: The Royal Infirmary of Edinburgh 1729-1929 Edin. 1937; R.G.W. Anderson & A.D.C. Simpson (eds.) The Early Years of the Edinburgh Medical School Edin. 1976. But see also A. Cunningham "Aspects of Medical Education in Britain in the 17th and Early 18th Centuries" Unpub. PhD London 1974.

[6]See T.C. Smout A History of the Scottish People 1560-1830 Fontana/Collins 1972: B. Lenman An Economic History of Modern Scotland 1660-1976 Lond. 1977; N.T. Phillipson & R. Mitchison (eds.) Scotland in the Age of Improvement Edin. 1970; M. Flinn (ed.) Scottish Population History C.U.P. 1977; A.J. Durie The Scottish Linen Industry in the Eighteenth Century Edin. 1979; C. Larner Enemies of God. The Witch-Hunt in Scotland Oxford 1983 (c.1981); J. Dwyer, R.A. Mason & A. Murdoch (eds.) New Perspectives on the Politics and Culture of Early Modern Scotland Edin. 1982.

governing them.[7] Within the framework of the history of the development of medicine in Edinburgh in the eighteenth century, this approach has been used by historians to show once again the economic basis of developments there, and also the generally more favourable "climate" to facilitate change. Attention in particular has been focussed on the scientific community, on certain elite groups intellectually cross-fertilizing each other, fostering particular cultural and intellectual activities with corresponding utilitarian value to themselves.[8]

This work has to some extent been underwritten by the work of Dr. N.T. Phillipson, who has observed that with regard to the Scottish Enlightenment,

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[7] K. Thomas Religion and the Decline of Magic Penguin 1973 (1971) A. Thackray "Natural Knowledge in Cultural Context" American Historical Review lxxix (1974) pp.672-709; Roger Hahn The Anatomy of a Scientific Institution: the Paris Academy of Sciences 1666-1803 Berkeley 1971; C. Webster The Great Instauration Duckworth 1975; J. Morrell "Reflections on the history of Scottish Science" History of Science 12 (1974) pp.81-94; M. Teich and R.M. Young (eds.) Changing Perspectives in the History of Science Lond. 1973; G. Rousseau and R. Porter (eds.) The Ferment of Knowledge: Studies in the Historiography of Eighteenth Century Science C.U.P. 1980; P. Wright & Andrew Treacher (eds.) The Problem of Medical Knowledge Edin. 1982; C. Rosenberg The Therapeutic Revolution 1979; I. Inkster & J. Morrell (eds.) Metropolis and Province: Science in British Culture 1780-1850 Phil. 1983; B. Barnes & S. Shapin (eds.) Natural Order: historical studies of scientific culture Edin. 1979.

[8] J. Morrell "The University of Edinburgh in the late Eighteenth Century: Its Scientific Eminence and Academic Structure" Isis (62) 1971 pp.158-71; S. Shapin "The Royal Society of Edinburgh: A Study of the Social Context of Hanoverian Science" Unpub. PhD thesis, Univ. of Penn. 1971; S. Shapin "Property, Patronage and the Politics of Science; The Founding of the Royal Society of Edinburgh" Brit. Journal for the History of Science 7 (1974) pp.1-41; S. Shapin "The Audience for Science in Eighteenth Century

> it is Edinburgh's elite society, its collective needs, its expectations and its cultural life that we need to understand if we are to understand the social foundations of the Scottish Enlightenment.[9]

Taking their cue from this identification of a dominant literati by the mid-eighteenth century, historians of Scottish medicine have adapted the older historiography to this new thesis. They have assumed the nineteenth century identification between the development of the University of Edinburgh and the development of the Edinburgh Medical School, and onto it they have grafted a study of the scientific intelligentsia. Out of this synthesis has emerged a picture of the development of a more or less consciously-conceived programme of medical instruction, originating in the minds of a group of progressively minded men, fired with enthusiasm over the popularity enjoyed by Boerhaave in Leiden, imbued with a philosophy of civic virtue and economic improvement, and determined to create a medical school in Edinburgh complete with an infirmary for clinical training at the bedside.[10] Alexander Monro's

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Edinburgh" History of Science 12 (1974) pp. 95-121; V. & B. Bullough "The Causes of the Scottish Renaissance of the Eighteenth Century" Bulletin of the History of Medicine 45 (1971) pp. 13-28; A. Chitnis The Scottish Enlightenment Croom Helm 1978.

[9]N.T. Phillipson "Towards a definition of the Scottish Enlightenment" in P. Fritz & D. Williams (eds.) City and Society in the Eighteenth Century Toronto 1973, pp. 125-47, p. 130.

[10]See J.R.R. Christie "The origins and development of the Scottish Scientific Community 1680-1760" History of Science 12 (1974) pp. 122-41, and J. Morrell "The Edinburgh Town Council and its University 1717-1766" in R.G.W. Anderson & A.D.C. Simpson (eds.) The Early Years . . . op. cit. Edin. 1976; C.J. Lawrence "Early Edinburgh Medicine: Theory and Practice" in R.G.W. Anderson & A.D.C. Simpson (eds.) The Early Years . . . op. cit. Edin. 1976, pp. 81-94.

anatomy classes, the establishment of a programme of medical teaching using Boerhaave's texts by four fellows of the College of Physicians, and the establishment of the Royal Infirmary, are all seen as part of a grand design originating in the minds of the two Monros and the four original medical professors in the university--John Rutherford, Andrew St. Clair, John Innes and Andrew Plummer--given every encouragement by the enlightened self-interest of the Edinburgh Town-Council and the moral imperative and financial and administrative genius of the Lord Provost George Drummond. "The new Medical School,"wrote John Christie, "was the high-water mark of that Dutch influence on Scottish higher education initiated by Carstares. . . . /It was/ a remarkable new cultural artefact, in that it was the adoption, in precise and specific detail, of a foreign model of scientific education."[11] Subsequent work has continued to give high priority to this intellectual élite, seeing, for example, in the high culture of physiological research in Edinburgh in the mid-eighteenth century the expression of Enlightenment social philosophy.[12]

All this valuable work is attempting to locate scientific ideas and institutions firmly within the social context in which they arose. This is not an easy task,

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[11] J.R.R. Christie "The origins and development . . ." op. cit. 1974 pp.128 and 131.

[12] See J.R.R. Christie "Ether and the science of chemistry 1740-1790" in G.N. Cantor and M.J.S. Hodge (eds.) Conceptions of Ether: Studies in the History of the Ether C.U.P. 1981, and C.Lawrence "The Nervous System and Society in the Scottish Enlightenment" in B. Barnes and S. Shapin (eds.) Natural Order . . . op. cit. 1979.

particularly when, as in the case of Edinburgh, sources are not abundant. It becomes easy to over-emphasize particular accounts. For example, one of the few contemporary sources of information concerning medical developments in Edinburgh in the 1720's and 1730's is an autobiographical work by Alexander Monro.[13] In this document Monro describes, amongst other things, the contribution made by his father John Monro and himself to the promotion of medical education in Edinburgh prior to the establishment of the faculty of medicine, and their contribution to the foundation of the Royal Infirmary. All this information is true enough, as we will see in chapter four of this thesis. Monro pursued the study and teaching of anatomy more systematically than had previously been the case in Edinburgh, as far as we know; John Monro promoted medical teaching in general and in particular the establishment of an infirmary, and Alexander pursued clinical teaching in that institution. However, as we shall also see in chapter four, these developments were the subject of intense rivalry between the College of Physicians and the Incorporation of Surgeons, and yet Monro made virtually no mention of the latter institution. This is a particularly surprising omission when one considers that he was himself a master of the Incorporation, and participated in the affairs of that institution at the same time that he and his father were working most hard to establish the Medical School and

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[13] H.D. Erlam "Alexander Monro, primus" University of Edinburgh Journal (18) 1953-55, pp.77-105, /Monro Autobiography/.

the Royal Infirmary. Alexander Monro was perfectly aware how important the apprentices of surgeon-apothecaries were to the pedagogic purpose of the Infirmary,[14] and of the fears and hostilities of surgeon-apothecaries in this regard.

Alexander Monro was an extremely honourable man. The facts he revealed in his autobiography were undoubtedly correct, but its value as a historical record (as with most autobiographies) is compromised by sins of omission. He did not tell the whole story. His exclusion of the Incorporation of Surgeons was not the work of conscious deception; for the purpose for which the Autobiography was intended, the Incorporation of Surgeons was not relevant. To see it largely as a source of information about the events of the period is to miss its point. It was intended as an exercise to demonstrate the virtuous life led by Alexander Monro, and to stand as an inspiration for others. As such it is important as a testimonial to Monro's undoubted piety and, perhaps equally important, to his pedagogic zeal. Its importance as a source of events which do not serve this purpose is, however, extremely limited.

The influence of the Autobiography has been extensive. It was written in the third person and, although never published, appeared to have been intended for publication as a biography

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[14] A Letter from a Gentleman in Town to his Friend in the Country, relating to the Royal Infirmary of Edinburgh. Edin. 1739, p.4.

by some contemporary or descendant. It was used extensively for a series of articles on the life of Alexander Monro published in the Edinburgh Magazine and Review[15] in the 1770's, and Alexander Monro's son David used it to write a biographical preface to the publication of his father's works in the same period.[16] Bower leaned heavily on this work in the account of the medical faculty contained in his history of the university,[17] and Grant relied to a great extent on Bower's book for his shorter history. In a very substantial way, therefore, the Autobiography has become the authority upon which a history of the medical school as a section of the history of the university has been written.

This twin identification of the Edinburgh Medical School with a scientific élite headed by Alexander Monro, and with the University of Edinburgh, distorts the image of medical education in the early eighteenth century. The Edinburgh Medical School was not a scientific society for an intellectual élite. However enlightened and energetic these gentlemen may have been, they would have achieved very little if large numbers of students had not been willing annually to pay three guineas for the privilege of listening to the professors and taking

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[15]"A Life of the Celebrated Dr. Monro..." Edinburgh Magazine and Review Vol.I March pp.302-306 and Apr. pp.337-343, 1774.

[16]Alexander Monro Works Edin. 1781.

[17]H.D. Erlam "Alexander Monro, primus" op.cit. 1953-55, p. 79.

copious notes. As news of the Edinburgh Medical School spread, English, Irish and then American students came in increasing numbers, but in the first decades the student body was drawn almost exclusively from the apprentices of masters of the Incorporation of Surgeons. There was no structured compulsion for students to attend medical classes; indeed, as we shall see, masters of the Incorporation of Surgeons actively discouraged attendance initially. The demand for medical education was a popular movement, for which those professors successful in obtaining the patronage of the university reaped the benefit, to their own financial and the students intellectual satisfaction. An explanation of the reasons behind the success of the Edinburgh Medical School has to account for this popular phenomena.

If the significance of the scientific elite needs qualification, then we must also reconsider the importance of Herman Boerhaave (1668-1738). He was the foremost medical professor in Europe in the first decades of the eighteenth century.[18] His name and medical publications, combining the iatro-mechanical physiology popular in Europe at that time with an eclectic therapeutics, were the basic texts used by the early medical professors in Edinburgh.[19] For this reason,

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[18]G.A. Lindeboom Herman Boerhaave: The Man and His Work Lond. 1968.

[19]A full discussion of the development of iatro-mechanical ideas is in T.M. Brown "The Mechanical Philosophy and the 'Animal Oeconomy'--A Study in the Development of English Physiology in the Seventeenth and Early Eighteenth Century" Unpub. PhD Princeton 1968.

Boerhaave is considered the intellectual inspiration behind the development of medical education in Edinburgh.[20] However, such a connection has yet to be demonstrated conclusively.[21] Moreover, we know that by mid-century the Boerhaavian acceptance of a mechanical explanatory physiology based upon hydraulic and chemical concepts was redundant in Edinburgh.[22] We are, therefore, referring to a set of ideas introduced in the 1720's, dead by the 1750's. Before we assume any acceptance of the authority of Boerhaave's ideas in Edinburgh, an acceptance we know the professors encouraged, we need to look more carefully at its function. It would be interesting, for example, to see "Boerhaavianism" in Edinburgh analysed in the same way that Margaret Jacob has outlined the social meaning of Newtonianism in England at the turn of the eighteenth century,[23] or in the way Theodore Brown has analysed the adoption of iatro-mechanical ideas by the College of Physicians in London and its subsequent abandonment of those same ideas.[24]

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[20]See for example E. Ashworth Underwood Boerhaave's Men . . . op. cit. 1977 and W.R.O. Goslings "Leiden and Edinburgh: The Seed, The Soil and The Climate" in R.G.W. Anderson and A.D.C. Simpson (eds.) The Early Years . . . op. cit. 1976, pp. 1-18.

[21]C.J. Lawrence "Early Edinburgh Medicine . . ."op. cit. 1976.

[22]Ibid.

[23]Margaret C. Jacob The Newtonians and the English Revolution 1681-1720 N.Y. 1976.

[24]In addition to his thesis, (note 19) see T.M. Brown "The College of Physicians and the Acceptance of Iatromechanism in England 1665-1695" Bulletin of the History of Medicine 44 (1970) pp. 12-30, and "From Mechanism to Vitalism in Eighteenth Century English Physiology" Journal of the History of Biology 7 (1974) pp. 179-216.

Both the origins of the Edinburgh Medical School and the intellectual activity it generated have to be located, I would maintain, at a more popular level than the historiography has thus far achieved. A level which comprehends two considerations of Scottish economic and social development at the turn of the eighteenth century. The first is the "rise of the class of lairds",[25] a number--estimated at 10,000,[26] of men usually of moderate means but with property carrying minimal feudal and financial burdens and a measure of local power and influence.[27] As a class, together with the urban commercial, craft and professional classes, they enjoyed a degree of literacy which even those most dubious of general levels of Scottish literacy in the seventeenth and eighteenth centuries do not deny.[28]

This thesis deals largely with the Incorporation of Surgeons of Edinburgh, the premier craft incorporation in the capital city in the seventeenth century whose members were largely drawn from these classes. It will show an incorporation with considerable power in burgh politics, which it was able to use to the financial benefit of its member by achieving the legislated amalgamation of the two occupations of surgeon and apothecary. Such an amalgamation apparently proved an attractive educational opportunity to the sons of gentlemen, providing increasing numbers of apprentices for surgeon-

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[25] R. Mitchison Lordship to Patronage: Scotland 1603-1745 Lond. 1983, p. 79.

[26] Ibid. p.80.

[27] bid. pp.79-81.

[28] R. Houston "The Literacy Myth?: Illiteracy in Scotland 1630-1760" Past & Present 96 (August 1982) pp.81-102.

apothecaries to educate. I will argue that in the commitment to the education of apprentices the origins of the Edinburgh Medical School are to be found. From these sources we can find not only almost all the original professors, but also the necessary pool of students expecting instruction in not only basic manual medical skills but also medical theory. The first four chapters are devoted to these developments.

As we will see in these early chapters, the Incorporation invested enormous amounts of its corporate funds in litigation opposing the authority of the College of Physicians of Edinburgh, established in 1681. Such opposition was not peculiar to Scotland. The Royal College of Physicians in London was experiencing difficulty exercising the monopoly it had been granted by its charter of 1518. With the steady growth of London in the seventeenth century the College found its powers to prosecute illegal practitioners increasingly undermined.[29] As one historian has observed ". . . the carefully constructed edifice of medical monopolies established under the Stuarts was highly unstable. As in the commercial world, the logical delineation of functions, even if guaranteed by monopoly rights, was no protection against natural expansion when market conditions were favourable."[30] The College faced competition, ebbing

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[29]Sir George Clark History of the Royal College of Physicians 2 vols. London 1964.

[30]Charles Webster The Great Instauration op. cit. 1975, p. 254.

and flowing with the political tide, from a variety of sources; from quacks, a generic term applied to any unsanctioned medical practitioner; from men claiming to possess medical degrees who had not obtained the licence of the College; and from surgeons and apothecaries accused by the College of practicing as physicians.[31] It is the latter category which concerns us.

Distinctions between the practice of physicians, surgeons and apothecaries in London were codified during the course of the sixteenth and early seventeenth centuries, as institutional establishments representing each order were created. Although not technically the first medical institution to be incorporated in London, the charter of the College of Physicians granted by Henry VIII in 1518 set the pattern for medical organization in England which remained virtually unchanged until the early nineteenth century. The significant legislation for surgeons was the charter of 1540 which united the Incorporated Barber-Surgeons' Company and the unincorporated Fellowship of Surgeons.[32] The apothecaries charter came later, granted by James VI in 1617.[33] The College had some power to

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[31] In many respects Sir George Clark's History is a catalogue of the opposition to its monopoly rights with which the College had constantly to deal.

[32] J.F. South Memorials of the Craft of Surgery in England edited by D'Arcy Power, London 1886. Sydney T. Young Annals of the Barber-Surgeons of London London 1890. Jesse Dobson and R. Milnes Walker Barbers & Barber-Surgeons of London London 1979.

[33] C. Wall, H.C. Cameron & E. Ashworth Underwood A History of the Worshipful Society of Apothecaries of London vol. I Lond. 1963.

influence the terms of the charters obtained by the other two, and from the recorded histories it seems clear that the College's principal concern was to ensure that surgeons and apothecaries should not have the liberty to administer medicines to be taken internally, and that apothecaries should not have any independent right to offer advice or treatment at all.[34] Superintendence of the internal actions of the body was to remain the most closely guarded prerogative of the physicians.

As we have already stated, the College found the distinctions difficult to maintain. The right it had assumed to direct medical organization, sanctioned by the Stuarts, was "a carefully constructed edifice" which could not be sustained by the actual experience of contemporary medical practice. The College of Physicians in Dublin, established in 1667, found it equally impossible to prevent surgeons and apothecaries from administering internal medicines.[35] The clearest example

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[34]See Sir G. Clark History . . . op. cit. 1964, vol. I pp. 121, 152-54, 206-07, 242, 265-272 and espec. chap. IX "Surgeons, apothecaries and sceptics"; Jesse Dobson & H. Milnes Walker Barbers & Barber-Surgeons . . . op. cit. 1979, p. 54; C. Wall, H.C. Cameron & E Ashworth Underwood A History of the Worshipful Society . . . op. cit. 1963, chap. 4 "The Disputes with the College of Physicians" pp. 41-57, and chap. 9 "The Disputes with the College of Physicians renewed" pp. 107-35; J.F. South Memorials of the Craft of Surgery . . . op. cit. 1886, p. 252.

[35]See J. Fleetwood History of Medicine in Ireland Dublin 1951, p. 84; J.D.H. Widdess A History of the Royal College of Physicians of Ireland 1654-1963 Edin. 1963, p. 36.

of the great gulf between wish and reality can be seen in the situation in Glasgow. Glasgow was an extremely small town in the seventeenth century but it had a relatively inflated medical heritage in the Royal charter obtained by Peter Lowe in 1599 from James VI.[36] The charter created a bipartite institution, power being shared equally between two principals, or "Visitors", one a physician and one a surgeon. It was almost a tripartite division, since the power to inspect drugs rested with the two principals along with William Spang "an old pharmacist in the burgh."[37] The original charter did, however, recognize the superior status of the physician. It granted to the Visitors the power to examine and licence all wishing to practice surgery, but only the power to inhibit physicians who could not produce a medical degree from a recognized university.

In spite of such clear demarcation of status, the institution which arose out of this charter afforded no superior role for the physician. From its inception, the Faculty was an institution controlled by surgeons, and it functioned as a licensing body for general practitioners.[38] Only one Visitor

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[36] A. Duncan Memorials of the Faculty of Physicians & Surgeons of Glasgow Glasgow 1896. The charter is printed on pages 39-45.

[37] Ibid. p.42.

[38] The original charter provided no name, but during the course of the seventeenth century a succession of names provides a guide to the relative status of members. The name evolved from "Faculty of Chirurgeons" through "Faculty of Chyrurgeons and Physitians" to "Faculty of Physicians and Surgeons of Glasgow". Ibid.p.55.

was recorded, and he was always a surgeon. The historian of the Faculty tells us that in the first half of the seventeenth century very few physicians were practising in Glasgow.[39] The political identification of the members of the Faculty in the first half of the seventeenth century was not with royal patronage. In 1656 surgeons and barbers united to obtain a Seal of Cause, or "Letter of Deaconry", from Glasgow municipality, which gave them entry into the "brotherhood" of trades by the power to elect a Deacon.[40] It was a political move for identification with the burgh "for ane joynt and harmoneus correspondence of brotherhood as brother citizens willing to simpatheise with the rest of the bodie of the citie...."[41]

After the Restoration, therefore, two institutions, one acting under the Royal Charter, and one acting under the Letter of Deaconry, existed simultaneously in the same body.[42] It was not a happy accord, since a growing number of physicians began to petition for entry into the Faculty and to demand autonomous existence from municipal control.[43] Confrontation with the burgh over the exclusive power to licence practitioners resulted in an extensive legal battle between the faculty and the Glasgow Town Council, resolved in a decision delivered in 1691 in which the Faculty achieved independence. Precisely

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[39] A. Duncan Memorials of the Faculty . . . op. cit. 1896, p. 61.

[40] Ibid. pp. 58-60.

[41] Ibid. p. 60.

[42] Ibid. p. 83.

[43] Ibid. pp. 78-81.

what was happening within the medical community in Glasgow at the end of the seventeenth century is impossible to determine without more extensive research,[44] but it appears as if the medical amalgamation tolerated by the surgeons came to an end after the Restoration. The original charter had given the Faculty arbitrary power to prosecute practitioners not conforming to its prescription, and we are told "From about the year 1665 onwards, for twenty years, a mania for prosecuting appears to have seized [the Faculty]".[45] The decision of 1691 confirmed the Faculty in its original form[46] and the "Craft of Chirurgeons and Barbouris" was left as a rather ineffectual rump, from which the barbers seceded in 1722.[47]

Within this larger context, therefore, it is no surprise to find the Incorporations of Surgeons of Edinburgh strenuously opposing the establishment of a College of Physicians in that city in the late seventeenth century. The situation in Edinburgh, however, was in some respects unique. Surgeons and apothecaries in Edinburgh achieved a

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[44] Records of the Faculty, for example, are missing for the period 1688-1733.

[45] A. Duncan Memorials of the Faculty . . . op. cit. 1896, p.74.

[46] Ibid. chapter IX "The Faculty at the End of the Seventeenth Century" pp.77-82.

[47] Ibid. chapter X "The Contest Between the Surgeons and Barbers 1700-1722" pp.83-90.

political union which resulted in a metamorphosis of the traditional incorporation into the Incorporation of Surgeon-Apothecaries, a powerful body with a degree of active political protection by the burgh not enjoyed elsewhere. In London the apothecaries were never wholly independent of the physicians;[48] even after 1704, when apothecaries gained the legal right to practice medicine, they did so in a client relationship with physicians.[49] In Dublin, surgeons and apothecaries were legally united in 1687, and successfully challenged the College of Physician's attempts to regulate medical practice there, but the Corporation itself was not strong.[50] Irish guilds had no power to build exclusive monopolies, so that by the eighteenth century "there was practically free trade in surgery at that time."[51] In Glasgow the apothecaries were conspicuously absent from the

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[48]See, for example, the terms of their original charter in Sir G. Clark History . . . op. cit. 1964, vol. I chap. XII "Jacobean Plans 1614-20" pp. 218-38, and C. Wall et al A History of the Worshipful Society . . . op. cit. 1963, p. 41.

[49]Sir G. Clark History . . . op. cit. 1964, vol. II, p. 379.

[50]See J. Fleetwood History of Medicine . . . op. cit. 1951, p. 84.

[51]See Sir Charles A. Cameron History of the Royal College of Surgeons in Ireland . . . Dublin 1886, p. 82, where he states "In 1672 the Lord Lieutenant in Council, acting under the provisions of an Act of Parliament, framed a set of rules for all the fortified towns in Ireland, by which, on payment of a fine of 20s., any "foreigner" was allowed to join any guild of tradesmen he might elect." This was done, he explained, "to induce the English, Scotch and foreigners to settle in their town."

political arena.

Surgeon-apothecaries in Edinburgh also differed from counterparts elsewhere in having a singularly well-defined conception of their responsibilities as teachers. The Apothecaries Company in London also had a strong educational programme, but it was not defended with the aggressive spirit the surgeon-apothecaries in Edinburgh employed. They took great pride in their role as teachers. It was a function of their medical role they always emphasized when appealing for political support. The Incorporation of Surgeon-Apothecaries was recognized as the earliest source of medical education in Edinburgh, "the chief medical school in that city from the first institution of the [Incorporation] in the year 1505, till the transference of the anatomical class into the University in 1725."[52] Moreover, it was recognized as the principal source of education of those entering military service. In 1739 it was argued that

> Edinburgh has, for Time out of mind, been in great reputation for educating Youth in the Art of Surgery; the Army, the Royal Navy, the Merchant Ships, our Colonies abroad, and many Places in Britain and Ireland, are in a great Measure supplied with Gentlemen of that Employment educated here;[53]

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[52] John Thomson An Account of the Life, Lectures and Writings of William Cullen M.D. 2 vols. London 1859, vol.I p.8.

[53] A Letter from a Gentleman in Town to his Friend in the Country Edin. 1739.

Surgeon-apothecaries, then, were teaching large numbers of apprentices, and they had strong connections with military avenues for medical practice. There is another element, more difficult to document conclusively, with which surgeon-apothecaries in Edinburgh were closely related. By focussing attention upon the activities of surgeon-apothecaries in Edinburgh in the early decades of the eighteenth century one discovers a perspective on the study and practice of medicine which emphasizes man's relationship to the external environment. As C.J. Glacken has pointed out, "in no other preceding age had thinkers discussed questions of culture and environment with such thoroughness and penetration as did those of the eighteenth century."[54] In his study of the relative strength in various ages of the idea of divine design in nature, and the related question of environmental influence on man and vice versa, Glacken regards the eighteenth century as the high point of environmental ideas; influential thinkers wrote most confidently in that century of the important function served by the environment in determining the health, character and government of man.[55] Such ideas as these are clearly in evidence in Edinburgh in the early decades of the eighteenth century. They were not peculiar to members of the Incorporation of Surgeon-Apothecaries; nor could it be

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[54]C.J. Glacken Traces on the Rhodian Shore Berkeley 1967, p.501.

[55]Ibid. chap.12 "Climate, the Moeurs, Religion, and Government" pp.551-622.

argued that the Incorporation was the seminal influence through which these ideas were propagated. We are looking at a loose intellectual community of opinion amongst surgeon-apothecaries, physicians and laymen with common acceptance of notions of correct moral behaviour, who recognized God and/or nature as the teacher of that morality. These men held a collection of medical ideas which purported to explain the influence of natural phenomena on man's health and how that influence could be used to improve the quality of life at the same time that it endorsed moral behaviour. Underlying these ideas was an assumption of a common identity between utilitarian, economic and moral motivations.

Such ideas could be expressed in terms of overtly religious precepts: on the relationship, for example, between righteousness, asceticism and health which Sir John Clerk held so strongly.[56] Or, expressed in another way, they could dwell on the moral lesson which disease taught. Arguing for the utility and economy of taking care of patients collectively, where they "may be comfortably subsisted and their Health taken care of at a small Charge;" the official account of the establishment of the Royal Infirmary, published in 1749, continued,

> and where, by the Blessing of God, their bodily Diseases may become the Means of improving their Minds, and correcting their Morals, and of making them experimentally to feel and know, <u>That it is</u>

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[56] See chapter V "Surgeon-Apothecaries as General Practitioners."

> good for them to have been afflicted. [emphasis in original.][57]

We will also find these ideas being expressed in terms of a defence of the medical art, when that art was encouraging natural remedies. Consider Dr. Charles Alston's discussion with his students

> Whether there were a fatal period of every man's life, beyond which it were not in the compass of either of art, or sobriety, or good management, to extend it, and as little in the power of disease or intemperance, or even the plague or sword, to shorten it.[58]

Notice that the context of the discussion was the efficacy of moderation and "good management" in extending life. Alston's response, while acknowledging human fallibility in the face of the inevitable, was essentially an affirmation of the medically possible when natural means could be invoked. "An ignorant Woman", he declared,

> may say, you can never prevent death though you may give ease; and certainly in many cases it is not in the power of physick to protract life. But in many more cases it is, and can be done. Diseases in their own nature mortal, are daily cured by proper means. Are not hunger and thirst mortal disease: And do we not cure these?[59]

Another context of these ideas shows the medical practitioner as arbiter of moral/healthy conduct. This power could be extended over an individual patient even at the patient's own request, as in the case of the man who

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[57] History and Statutes of the Royal Infirmary of Edinburgh Edin. 1749, p.3.

[58] C. Alston Lectures on the Materia Medica Edin. 1770, p.8.

[59] Ibid. p.9.

wrote to a surgeon-apothecary asking him

> to prescribe something...by way of amulent to be taken at 4 att night and nothing for six hours after it, that I may have some excuse of this nature to resist several temptations this way that they may not think its my parsimony nor penury that makes me abstain from win run into that excess of riot.[60]

It was a power also possible to be applied on a social level to promote public health measures. René Sand has pointed out how Frances Hutcheson's injunction "that action is best which procures the greatest happiness to the greatest number" had implications for public health measures, the large majority of which concerned environmental, social and moral issues affecting human life.[61] Measures such as these, wrote Sand, were being discussed in France from the early eighteenth century, and constitute "medicine's most valuable contribution to the common good."[62] As we shall see, a variation on this theme, i.e. health and the regimental good, was a subject of concern with Scottish military medical officers by mid-century.

Ideas regarding the influence of natural phenomena on disease, then, were not the exclusive property of members of the Incorporation of Surgeon-Apothecaries. However, we are more likely to find them being promoted by these men. Teaching within the university was concentrated, so far as we are able to determine, upon consolidating "Boerhaavian"

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[60] S.R.O. GD/18/5261/8

[61] René Sand The Advance to Social Medicine London 1952, p.185.

[62] Ibid. p. 186.

medical teaching practices, i.e. the study of physiology, anatomy and chemistry as distinct spheres of knowledge complete in themselves and without reference to other areas of knowledge and unencumbered by questions of cosmic significance. In medical practice, physicians were most usually consulted--according to the opinion of a surgeon-apothecary which as far as we know was never refuted--in cases of acute, incapacitating illness beyond the powers of popular understanding and treatment. As this surgeon-apothecary was quick to point out, such a range of practice severely restricted a physician's ability to observe, and thus understand, the phenomena of disease. Surgeon-apothecaries, on the other hand, dealt with a great deal of chronic, non-critical illness and disease, conditions where patients were not at death's door and where they were able to comprehend and follow, if they so chose, therapies demanding more than the ingestion of pills and medicines. There is, moreover, evidence to suggest that surgeon-apothecaries were interested in developing these aspects of medical practice, in extending the role of the medical practitioner to encompass services, such as midwifery, for example, which were not considered part of a physician's medical concern. Surgeon-apothecaries, in effect, were more likely to be confronted with the more pervasive but less critical phenomena of ill-health, for which naturalistic remedies have always been more usually employed.

There is no evidence to suggest that the Incorporation of Surgeon-Apothecaries ever developed the study of environmental influences on human health into a distinct body of professional knowledge, although it does appear that they were prepared to use the idea as a political weapon. The question of gross human functions, however, and enquiry into the mechanisms--such as the operation of nerves and muscles--by which those functions were performed, was pursued by individual members of the Incorporation during the early years of the eighteenth century. The synthesis of environmental ideas into a physiological theory had to wait the arrival of William Cullen in Edinburgh in 1755. In his lectures Cullen taught his students that disease arose at least as much from social, environmental and behavioural considerations as from physiological disorders. Moreover, Cullen extended the boundaries of medical opinion to include analysis of the condition of physical well-being--a state of health--and taught his students that it could be achieved through rational, temperate living and control of the passions.

Cullen thus located knowledge of the power and influence of natural phenomena on human bodies securely within the medical lexicon. But Cullen was not merely transposing natural for divine wisdom. He did not deny final causes in nature, but he cast doubt on man's ability to comprehend them. He shared his contemporaries'

commitment to empirical observation and inductive reasoning, but as with David Hume, Cullen brought to inductive reasoning a sceptical criticism which robbed it of the authority of absolute certitude. He expanded the inductive method to embrace a limitless extension to the collection of facts, encouraging the co-operative nature of informed human intellectual endeavour and shifting the focus of intellectual attention away from the authority of general principles to the process of the accumulation of facts.

It is not the intention of this thesis to locate William Cullen's ideas within the social context of Edinburgh in the 1770's, when he was articulating them to such enthusiastic response from students. Ideas are not simply the result of immediate impressions; the human mind does not absorb, digest and regurgitate information instantaneously. Moreover, no single individual is solely responsible for the production of anything, whether it be material goods or ideas. Cullen himself understood this clearly: "it seems ridiculous," he told chemistry students in the 1750's,

> to refer the invention of any generall Art or Science to one particular person, it is always by the Successive Labours of several Persons that an Art is brought to Perfection, and instead of being able to refer the Origin of any general Art to one particular Person we can scarce tell for certain who Invented any particular Art.[63]

And this point, of course, is one of David Hume's principal

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[63] Archives - R.C.P.E. Cullen mss. #12 "Lectures on chemistry" 1757-58, p. 3.

grounds of rebuttal of those who attempted to make analogies between human and divine capacities.[64] Hume showed that the idea of the divine artisan was based on the false assumption of the exclusiveness of individual effort.

Cullen's lectures, then, are intended to demonstrate the tenacity of ideas linking natural law and medical practice in Edinburgh in the eighteenth century, to some extent outside the dominant medical authorities of the 1720's and 1730's, but finding medical orthodoxy in Cullen's lectures after 1755. It explains why the work of Robert Whytt, professor of the theory of medicine 1747-1766, is not included. Whytt made important contributions to understanding the mechanism of the nervous system, but from essentially metaphysical premises regarding human motion which at the same time denied the possibility of divinely-conceived natural laws.[65]

This argument can be made another way, linking it to larger cultural developments in eighteenth century Scotland. Cullen's career spanned the period generally labelled the Scottish Enlightenment. This period has been shown,[66] however,

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[64] David Hume Dialogues concerning Natural Religion (ed. with an introduction by N.K. Smith) Indianapolis 1981 (1947), Part V. pp. 167-168.

[65] See R.J. French Robert Whytt, the Soul and Medicine Lond. 1969; M. Barfoot "James Gregory (1753-1821) and Scottish Scientific Metaphysics 1750-1800" Unpub. Phd Edin.1983 compares the published works of Cullen and Whytt to reveal the fundamental differences in their respective epistemologies.

[66] N.T. Phillipson "Towards a definition . . ." op. cit. 1973, and "Culture and Society in the Eighteenth Century Province: The Case of Edinburgh and the Scottish Enlightenment" in Lawrence Stone (ed.) The University in Society 2 vols. Princeton 1974, vol. II pp. 407-48.

to comprise quite distinct periods. The first extended from the 1710's until the 1740's, and was characterized by a provincially-focussed economic and cultural movement, or put another way, by "distinctively Scottish pre-occupations" in regard to economic growth and cultural revanche.[67] Of these two preoccupations, Dr. Phillipson sees the former as dominant; a drive for economic growth by a forward-looking aristocratic provincial élite (itself the rump of the older landholding oligarchy), who combined a reforming zeal with philosophical optimism and a positive view of free will.[68] The second pre-occupation--cultural revanche--was nurtured by a nascent literati, looking to hold on to the values of passive inevitability which had attended the Union and which they found in Berkelean determinism; Dr. Phillipson sees this as a "deviation from the accepted ideological norms of polite culture in a city which was /otherwise/ a perfectly conventional example of a provincial capital with a lively but fairly conventional cultural life."[69]

The second period spanned the 1750's and early 1760's, a period of transition characterized by "an extraordinary upsurge of intellectual vitality. . .which

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[67] N.T. Phillipson "Towards a definition . . ." op. cit. 1973, p. 134.

[68] Ibid. pp.133-137.

[69] Ibid. p.137.

is unique to Edinburgh /and/ was a function of an ideological crisis within the governing class . . . ."[70] The economic elite abdicated cultural leadership in favour of the literati whose determinism, now caste in a sociological framework, appeared to them a satisfactory justification for abandoning their cultural paternalistic role. The third period, the 1770's until the 1790's, was characterized by a reaction to this new cultural leadership led by the rising bourgeoisie in Edinburgh, not happy with Hume's environmental determinism and anxious to re-assert man's free will in the light of--not in rejection of--that determinism. Hence Thomas Reid's articulation of the Common Sense philosophy and the attendant discredit, through inescapable accusations of atheism, of the opinions of Hume and his followers.

Cullen has to be placed within these cultural developments, and he lived through them all. He is only just beginning to receive serious scholarly attention,[71]

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[70] Ibid. pp. 132-33.

[71] In addition to the biography J. Thomson An Account of the Life . . . of William Cullen M.D. op. cit. 1859 see G.B. Risse "Dr. William Cullen, Physician, Edinburgh: A Consultation Practice in the Eighteenth Century" Bulletin of the History of Medicine 48 (1974) pp. 338-51; R.N. Johnstone "William Cullen" Medical History 3 (1959) pp. 33-45; J.K. Crellin "William Cullen - his calibre as a teacher" Medical History 15 (1971) pp. 79-87; W.P.D. Wightman "William Cullen and the teaching of chemistry" Annals of Science 11 (1955) pp. 154-65 and 12 (1956) pp. 192-204; I.A. Bowman "William Cullen (1710-90) and the primacy of the nervous system" Unpub. PhD Indiana University 1975; W.J. Bynum "Cullen and the study of fevers

and he is a man whose work deserves exploration. An important task is to establish precisely where he fits into Dr. Phillipson's sociological framework of the Scottish Enlightenment, and I would wish to argue that all Cullen's public work was a projection of the environmental determinism, or as I have labelled it, the organic view of nature, being developed in the pre-1750 period. At any given historical point in time individuals have ideas some of which point to the future and some to the past. Although Cullen was lecturing most influentially in the early 1770's, his ideas looked back to the period in the first half of the eighteenth century when the Scots were involved in a period of cultural reappraisal and revanche.

Perhaps even more compelling than considerations of the Scottish Enlightenment are the implications for a greater understanding of the medical profession in considering the activities of the surgeon-apothecaries and the medical opinions of William Cullen. Surgeon-apothecaries were the spiritual ancestors of the modern general practitioner.

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in Britain, 1760-1820" in W.J. Bynum & V. Nutton (eds.) Theories of Fever from Antiquity to the Enlightenment London 1981; C.J. Lawrence "The Nervous System and Society in the Scottish Enlightenment" in B. Barnes & S. Shapin (eds.) Natural Order:. . . op. cit. 1979, pp. 19-40.

For them, medical practice was their specialty; their principal medical responsibility lay in the skill with which they were able to provide effective therapies which had the unquestioned legitimacy of medical authority.

Before the eighteenth century, medical practice was not a defined discipline. It was practised by a whole coterie of occupational groups; the claim to monopoly by physicians in capital cities should not blind us to the reality of the situation. Medical practice before the eighteenth century was made up of a number of fragmented "disciplines", with as many bodies of knowledge underwriting them as there were particular medical skills. Surgeon-apothecaries were working to draw attention to, and in some cases engross, these diverse occupations; in either case their focus of attention and their measure of medical value lay in medicine as applied knowledge, not medicine as a literary and academic enterprise. William Cullen provided a coherent body of "scientific" knowledge with which those with such medical values could claim professional status. By drawing a figurative circle around the activities of these two forces, we can gain greater insight into an aspect of the development of the medical profession in the eighteenth century.

CHAPTER I

SURGEONS, APOTHECARIES AND PHYSICIANS

> Since the abortive attempt [by the physicians] of 1657 we had heartily shaken our sides with Moliere and with all Europe, at the physicians of the court of Louis XIV who imitated the foppery and pretentiousness of his noblesse. . . . They might have their 'Doctissimi Doctores, medicinae professores' deep in Galen; and might choose that their 'chirurgiani et apothecari' should be only 'sententiarum Facultatis fideles executoris' - the humble servants, in short of their physicians; but we were determined that it should not be so here.[1]

The complete history of the city of Edinburgh has still to be written.[2] As the capital city of Scotland it enjoyed obvious pre-eminence before 1707 as the political, legal and cultural centre; the magnet attracting the social capital--wealth, influence and aspirations--into its field. Edinburgh was a somewhat singular capital city, however, in that it enjoyed another source of power as the largest and most important of the Royal Burghs, far exceeding in

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[1] John Gairdner Historical Sketch of the Royal College of Surgeons of Edinburgh Edin. 1860.

[2] This is presently being done by the Edinburgh City Archivist, Dr. W. Makey. In the meantime, Edinburgh 1323-1923 Edin. 1923, and D. Robertson & M. Wood Castle & Town Edin. 1928 are the most contemporary reports. The History of the Good Town of Edinburgh: From the Year 1583 to the Present Year Edin. 1763, also has much useful information.

wealth and population any other burgh in Scotland. It can be argued that the burghs of Scotland had always enjoyed a more distinct political and cultural identity than other towns in the British Isles. From the twelfth century they were "enclosed strong points,"[3] places of security and of freedom for the individual in a land where political anarchy and feudal law were the norm. The primary concern of the citizens of the burghs was with trade, and in return for the gold and silver which the king needed for the prosecution of war and diplomacy with other countries, they were given a monopoly over trade in the area immediately surrounding this burgh. The Royal Burghs, those whose charter had come from the king himself, had a particular distinction in being given the monopoly over foreign trade and the power to enact laws to regulate and prosecute that trade most effectually.[4] They became, therefore, the most prosperous, powerful, and influential of the burghs of Scotland.

The possession of their own laws, and the individual freedom and self-government which burgh residence conferred, gave the citizens a strong sense of communal identity, not only amongst themselves but also in distinction to the rest of the land. They were "communities which were somehow

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[3] W. Croft Dickinson Scotland from the Earliest Times to 1603 3rd ed. revised and edited by Archibald A.M. Duncan, Oxford 1977 p. 106.

[4] T. Keith "The Trading Privileges of the Royal Boroughs of Scotland" Economic History Review 28 (1913) pp. 454-71 and 678-90.

different and which were outside the common law and administration of the rest of the king's lands."[5] Another historian has referred to them as "a state within a state."[6] Their distinctive identity was maintained after the end of the fourteenth century in two ways. Because of their important contribution to the king's revenues the burghs were by that time established as a separate estate in parliament.[7] Although their representation was not large, or very conscientiously maintained compared to that of the prelates and nobility, this political voice helped them preserve their distinct identity and promote their particular interests. They were never unduly concerned with matters of state and diplomacy, but took a full and active role in all matters concerning finance and the regulation of trade.

The corporate identity of the burghs was underwritten further by the emergence of the Convention of Royal Burghs,[8] which from the sixteenth century was the annual legislative forum for the Royal Burghs. They discussed burgh trade and policy[9] and during the sixteenth and seventeenth centuries

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[5]Croft Dickinson, op. cit. 1977, p. 103.

[6]T.C. Smout A History of the Scottish People 1560-1830 Fontana/Collins 1972, p. 147.

[7]Croft Dickinson, op. cit. 1977, chap. 17 "The Burgesses come to Parliament" pp. 186-94.

[8]T. Pagan The Convention of the Royal Burghs of Scotland Glasgow 1926.

[9]Croft Dickinson, op. cit. 1977, p. 283.

the Convention became a vehicle through which the burghs could gain maximum benefit from their relatively small parliamentary representation. It became customary for the Convention to meet immediately prior to the estates of parliament, to minimize travelling expenses and to decide on common policy. It would seem that to some extent at least parliament was beholden to the Convention, because as late as 1701 a meeting of parliament was postponed until the Convention of Royal Burghs had completed its deliberations.[10]

The Royal Burghs of Scotland, therefore, were a distinct political force in their own right during the sixteenth and seventeenth centuries, and the city of Edinburgh, being by far the most important and influential of the burghs, was the principal spokesman of that force. Within Edinburgh, the merchant community was dominant, but because of its status as a capital city it had a larger than average community of craftsmen of luxury goods. Goldsmiths selling jewellery, hammermen making pewter and iron pots, wrights producing fine furniture and medical men catering to the diseases of the wealthy were all to be found in abundance.

Edinburgh was exceptional in the degree of political power held by her incorporated craftsmen.[11] They were

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[10] E. Porritt The Unreformed House of Commons 2 vols. Camb. 1903, p. 72.

[11] See J. Colston The Incorporated Trades of Edinburgh Edin. 1891, and Sir J.D. Marwick Edinburgh Crafts and Guilds Edin. 1909.

notorious for their political self-consciousness and their potentiality for disruption within the city. ". . . if they in anything be controlled," wrote James VI in the Basilikon Doron, "up goeth the blue blanket."[12] In the first half of the sixteenth century their right to self-government was repressed, but in 1582 they gained a voice in the government of the city when the 16-year old James VI granted them a Decreet Arbitral which went some way to meeting their grievances. The Decreet Arbitral confirmed the sett, or constitution, of the city, which on the face of it gave over-whelming preponderance to the merchant interest. Burgh affairs were controlled by the Town-Council, i.e. the Provost, four Baillies, a Dean of Guild and a Treasurer (most of whom had to be merchants), ten merchant councillors (of whom seven were the magistrates of the previous year), six Deacons of Crafts and two crafts councillors; a total of twenty-five councillors. In practice, however, this constitution gave craft incorporations a not inconsiderable degree of power. Fourteen craft incorporations had been created in Edinburgh between 1449 and 1581, and while only six Deacons of Crafts sat continually on council the Decreet laid down that the other eight, designated

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[12]Quoted in Croft Dickinson, op. cit. 1977, p. 288. The blue blanket was the amalgamated trades' banner. See Wm. Maitland The History of Edinburgh from its Foundation to the Present Time. . . . Edin. 1753, pp. 9-10, and A. Penneciuk An Historical Account of the Blue Blanket, or Craftsmen's Banner, containing the Fundamental Principles of the Good-Town, with the Powers and Prerogatives of the Crafts of Edinburgh, etc. Edin. 1727.

"extraordinary Deacons," were to be allowed to participate on certain occasions. Most particularly, they were to participate in administration of funds for the "Common Good," i.e. the revenues of the city, and moreover, were to participate in the annual election of magistrates.

The acknowledgement of leaders, or Deacons, was in itself a considerable victory for the crafts. The right to have Deacons, i.e. a representative head through whom grievances could be voiced and interests protected, had been suppressed in 1555 because it was considered "right dangerous"[13] but by the early seventeenth century the crafts negotiated the right virtually to elect their own Deacon. This concession had not been part of James VI's Decreet. In it the craftsmen had been given the right to elect one Baillie, but this privilege had been exchanged in the early seventeenth century for the right of each incorporation to submit a "long leet," or list, of six names to the magistrates, who eliminated three names and then returned the "short leet" to the incorporations. A Deacon was then elected from this list.[14] Thus the Deacons represented the only "populist" element in what was largely a self-perpetuating oligarchy.[15] On most issues voting would break

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[13]Quoted in Croft Dickinson op. cit. 1977, p. 288.

[14]Sir John Lauder of Fountainhall The Decisions of the Lords of Council & Session From June 6 1678 to July 30 1712 Edin. 1759, Feb. 28 1684.

[15]The election of Deacons of Crafts was the first step in the election of the magistracy "and all the subsequent steps

down to seventeen merchant councillors and sixteen craft councillors, and in the annual election of magistrates the ratio would be twenty merchant councillors to eighteen craft councillors.[16] The merchant interest could always ultimately prevail because of their overall majority, but their hegemony, or at least the peaceable government of the "good town," rested to a large extent upon the good will or co-option of at least some of the incorporations.[17]

Throughout the seventeenth century, therefore, the Edinburgh craft incorporations were in a position of some political strength. Individually they had the right to raise funds from their members to maintain an altar to their patron saint and to provide subsistence for widows, orphans and destitute brethren.[18] They obtained maximum political benefit, however, through a strong sense of corporate identity. They met in the Magdalen Chapel, the meeting place of the hammermen, and annually elected a

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in electing the Council and Magistrates has a great Dependence Upon that." The History of the Good Town. . . . op. cit. 1763, p. 7.

[16]See Edinburgh 1329-1929 op. cit. 1929 "Development of the Town-Council" pp. 265-318 outlining the degree of voting equality between the craftsmen and the merchants. See also Robertson & Wood Castle and Town op. cit. 1928, esp. chap. on "The Sett of the Burgh."

[17]See R. Chambers Traditions of Edinburgh Edin. 1825, pp. 184-88 for an account of the influence of one cobbler, and the magistrates' dependence upon his good will to keep the peace in Edinburgh.

[18]Croft Dickinson op. cit. 1977, p. 287.

Deacon-Convenor (although the office was not recognized in the sett of the burgh until 1730). It would appear that they also had a separate corporate financial income. From early in the seventeenth century surgeon apprentices contributed 6/-scots "to the Magdalen Chappel" when taking out their indentures, and it is to be presumed that the other incorporated crafts made proportionately similar contributions. It was no doubt through such corporate strength that they were able to raise funds for the erection of their own Trades Maidens' Hospital in the early years of the eighteenth century[19] and, as with the burgh community as a whole, they were most vociferous in defending their rights and privileges.

In addition to their participation in burgh affairs the crafts in Edinburgh were given, in 1584, a position unique in the British Isles in being granted direct representation to the Scottish parliament.[20] Each Royal Burgh sent one commissioner to the national parliament, elected by the burgh corporation, except Edinburgh, which sent two. And "It is thought good," ran a clause in the Act of Ratification of the Decreet Arbitral,

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[19] See Extracts from the Records of the Burgh of Edinburgh [Town-Council Mins.] 1701-1718 Appendix I, pp. 359-62 dealing with the erection of the Trades Maiden's Hospital.

[20] E. Porritt The Unreformed House of Commons op. cit. 1903, vol. II, pp. 69-72.

> that in all times coming one of the said commissioners for the burgh of Edinburgh shall be chosen by the said provost and bailies from of the number and calling of craftsmen, and that to be one burgess and guild brother of the burgh, of the best, expert and wise, and of honest reputation.[21]

For over a century, therefore, until the Act of Union of 1707 reverted representation in Edinburgh back to one member, the crafts of Edinburgh occupied a position of distinction "which attaches to no other Parliamentary constituency, either in Scotland or England, before or after the Union."[22]

The significance of this political structure in Edinburgh for understanding the development of medicine there is the fact that in the Decreet Arbitral of 1582 the "craft of chirurgery" was granted political pre-eminence amongst the incorporations, a position which it held throughout the seventeenth and early eighteenth centuries. In the second half of the seventeenth century the Deacon of Surgeons was Deacon-Convenor on twenty occasions.[23] The Deacon of Surgeons was always one of the six deacons chosen to sit on council and was always listed first in the council minutes. Moreover, he was often one of the two councillors

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[21] Acts of Parliament of Scotland [A.P.S.] vol. III, p. 363.

[22] E. Porritt, The Unreformed House of Commons op. cit. 1903, vol. II, p. 71.

[23] See list of Deacon-Convenors in J. Colston, The Incorporated Trades . . . op. cit. 1891, pp. 146-47.

elected by the magistracy to represent Edinburgh in the Scottish parliament or at the Convention of Royal Burghs.[24]

The Incorporation of Surgeons thus had significant political weight, which it could use in two ways. Locally it could exert pressure through its leadership of the incorporated crafts of Edinburgh; nationally it benefitted from Edinburgh's pre-eminence in the Convention of Royal Burghs and from the direct craft representation to the Scottish parliament. The extent of the Incorporation's power can be seen in its success in thwarting the efforts of the physicians of Edinburgh to establish a Royal College in 1656. According to Sir Robert Sibbald, a prominent physician in Edinburgh at the end of the century, the Incorporation of Surgeons "were the first movers and the intertainers of the opposition that did at last put a stop to the project. . . ."[25] The physicians had forwarded a proposal for a patent to Cromwell, and to thwart them the Incorporation was able to enlist the aid of the

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[24]See Town-Council Mins. for annual election of Deacons, where the Deacon of Surgeons always headed the list. James Borthwick and the Lord Provost represented Edinburgh in the Scottish parliament 1649-1650 and 1661-1662; Thomas Kincaid was one of the commissioners to the Convention of Royal Burghs in 1657, and James Borthwick was the commissioner in 1660; Arthur Temple, Deacon of Surgeons, represented the burgh with the Lord Provost in the Scottish parliament 1669-1670; William Borthwick replaced a deceased parliamentary commissioner in 1683.

[25]Sir Robert Sibbald "Memoirs of the Royal College of Physicians at Edinburgh" in Remains of Sir Robert Sibbald, Knt. M.D. Edin. 1837, p. 19.

Lord Provost, Andrew Ramsay.[26] Ramsay went to London to protest against the physicians' patent, and then aided the Incorporation in putting its case before a special session of the Convention of Royal Burghs. Thomas Kincaid, a past Deacon of the Surgeons, was one of the commissioners to the Convention.[27] So great was the concern of the surgeons that the following year they were still prepared to "resolve to borrow the sume of £100 st. and if need be to offer as security the whole real estate of the Calling . . . and if that fails to give satisfaction then every particular master shall be bound for his own particular portione. . . ."[28]

Ramsay's action reflected the close alliance between the Town-Council and the Incorporation of Surgeons by the middle of the seventeenth century. The alliance enabled the Incorporation to secure, through acts of parliament and the Town-Council, measures which considerably increased and extended its monopoly and professional area of competence. The first move in this direction was to bring the Incorporation under the direct authority, and the protection, of the Town Council. Previously, the Incorporation's right to a monopoly was confined to surgical practice and had issued from the king. In what was obviously a dispute with

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[26] See John Gairdner Historical Sketch of the Royal College of Surgeons of Edinburgh Edin. 1860.

[27] Town-Council Mins. 1655-1665 June 1 1657.

[28] Minute Books of the Royal College of Surgeons of Edinburgh [Surgs. Mins.] Jan. 14 1658.

apothecaries who were encroaching on surgical practices, the Town-Council issued an act in 1641 which effectively endorsed the surgeons' existing rights and specifically gave them authority in the name of the provost, baillies and council of Edinburgh, and in addition made the magistrates arbitrators in any future disputes.[29] This act was ratified by parliament on the last day of the parliamentary session in 1641 [30] (although it is not entered in the printed Acts of Parliament of Scotland). The parliamentary ratification gave the Incorporation the monopoly not only within the burgh but over the suburbs too; moreover, it gave the Incorporation the power (with the consent of the magistrates) to "pas search seik tak and apprehend" all unfreemen practicing within the town and suburbs "and to caus thame set cautioun to desist in tym cumming And gif they failyie to unlaw them in the somme of twentie poundis Scottis money toties quoties."[31]

Two years later another act of the Town-Council specifically discharged "apothecairs, unfree Chirurgians and their servants" from practicing surgery, and gave the

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[29] Act of Council in favour of the Deiken & Brethren of the Chirurgians of Edinburgh. Sept. 10 1641, in A Collection of the Royal Grants and other Documents relative to the Constitution & Privileges of the Royal College of Surgeons of Edinburgh. Edin. 1813.

[30] Act of Parliament ratifying the Town-Council Act Nov. 17 1641. Printed in Collection of Royal Grants . . . ibid. 1813.

[31] Ibid.

Incorporation the monopoly over the application of sear-clothes.[32] This act also gave the surgeons effective freedom to practice medicine as well as surgery[33] by declaring that the Incorporation had the monopoly

> over the curing of diseases - as tumouris, wounds, ulcers, luxatiouns, fractures, cure-ing of virolls et caetera and their accidents by operatiouns applicatiouns dyett Medicaments and what els requisite to the compleit cuire belongs properly to the friemen Masters Chirurgians of this brugh being tryed in Theorie and Practice sworne and admitted to the degrees of Mastership in Chirurgie by the forsaid Incorporation allanerlie . . .[34]

Disputes with the apothecaries obviously continued, because in 1655 the act of 1643 was reiterated and confirmed in perpetuity.[35]

Two years later, in 1657, the Incorporation took steps to prevent further disputes with the apothecaries by securing from the Town-Council the legislative amalgamation

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[32]Wrapping the dead in sear-clothes was a luxury possible only for the rich, and therefore probably constituted a lucrative source of income. See Henry G. Graham Social Life in Scotland in the Eighteenth Century London 1899, p. 53.

[33]Act of Town-Council Dec. 8 1643, quoted in Act of the Town-Council in favour of the Chirurgians of Edinburgh, June 27 1655, printed in Collection of Royal Grants . . . op. cit. 1813.

[34]Ibid.

[35]Act of Town-Council in favour of the Chirurgians of Edinburgh. June 27 1655, in Collection of Royal Grants . . . op. cit. 1813.

of the apothecaries and surgeons.[36] This act was a marriage of convenience beneficial to both apothecaries and surgeons. It gave the Incorporation effective control of the apothecaries' business--always the most lucrative part of medical practice--and strengthened it politically by virtue of their greater numbers; the loss of status suffered by the apothecaries in associating themselves with a craft incorporation was compensated by access to political participation in burgh affairs.[37]

The act laid down that no person was henceforth to be admitted to "the proffession and practise of the said airt of Apothecarie . . ." until he had made application to the magistrates, who would refer him to the surgeons and surgeon-apothecaries for trial and examination. If the intrant completed the examination successfully he was then required to return to the Town-Council, which retained ultimate jurisdiction over the apothecaries by reserving final approval of his admission into the brotherhood, or "fraternity of apothecaries and surgeon-apothecaries" in

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[36] Act of the Town-Council of Edinburgh in favour of the Chirurgion-Apothecaries 1657, in Collection of Royal Grants . . . op. cit. 1813. See also Town-Council Mins. Feb. 1657.

[37] We do not know conclusively on whose initiative this amalgamation emerged, but see John Gairdner Historical Sketch . . . op. cit. 1860, p. 9 where he states the apothecaries were beginning to encroach on surgeons' work - "to meddle with our scalpel." See also "Memorial for the Chirurgeon-Apothecaries of Edinburgh" 1723 where it is claimed the apothecaries took the lead in promoting the amalgamation.

its hands. The act also made provision for the inspection of apothecary shops. The magistrates were given the power to appoint annual inspectors (or visitors), who were to be two or more apothecaries and surgeon-apothecaries, one or more baillies and the Dean of Guild. The goodwill of such visitors was of crucial importance, for with no formal pharmacopoeia upon which to establish generally acceptable preparations they had the power to dismiss the stock, and thus the livelihood, of any apothecary as worthless or harmful.

The Town-Council went out of its way to insist that it was not creating a new corporation; the fraternity had no material independence from the Incorporation, and as long as surgeons and apothecaries remained united it was for all intents and purposes part of the Incorporation of Surgeons.[38] They met in the same building and conformed, as the act laid down, to the rules and regulations of the Incorporation. In order to maintain the authority established by the act over the apothecaries, the Incorporation needed the co-operation of the Town-Council, and during the second half of the seventeenth century it had that co-operation. From 1657, by right of burgh authority, members of the Incorporation, if they so wished, could legitimately

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[38]Such an arrangement was not particularly unusual. See Wm. Maitland The History of Edinburgh . . . op. cit. 1753, pp. 294-319, for a description of the various sub-trades which sheltered under the constitutional umbrella of many of the craft incorporations.

practice pharmacy and dispense drugs as well as fulfill the more traditional role of surgeons by stitching and dressing wounds, drawing and arresting blood, adjusting dislocations and fractures and extracting teeth. As a later critic of the surgeons was to observe sourly, "by their influence in the Magdalen Chappel, and consequently upon the choice of the Magistrates, they have by the connivance of the same been allowed to ingross both the Callings into one. . . ."[39] As surgeons could prescribe drugs without needing the authority of a physician, the end result was that these surgeon-apothecaries essentially fulfilled all the functions of a general practitioner.[40]

During the next few years the Incorporation secured more acts from the Town-Council, to re-endorse all its existing privileges, to give greater regulation and order to the new brotherhood, and to secure the right to exact the oath of the Town-Council from intrants.[41] All these measures received final endorsment in an act of parliament of 1670, which in a quite spectacular essay in legal verbiage, attempted to ratify in perpetuity and to secure against any conceivable reinterpretation, all the privileges

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[39] A Letter from a Gentleman in the Country to his friend in Town Edin. 1707.

[40] Walter Turnbull, surgeon to the poor 1663-1665 was paid £150 scots for "ordinar fiall" and £50 scots for "extra-ordinar cuires, internall and externall." Town-Council Mins. June 16 1665.

[41] A.P.S. 1670 c.44 viii p. 38, "Ratification in parliament in favour of the Chirurgeons of Edinburgh" Aug. 22 1670.

the Incorporation had been granted by the king and the Town-Council over the previous century and a half.[42]

The fundamental qualification for participation in the affairs of the Incorporation was the title "freeman chirurgeon," which he achieved through successful completion of an entrance examination. The level of knowledge and expertise expected of candidates in the middle of the seventeenth century is impossible to determine. We know they were not illiterate. Since first receiving royal recognition as a burgh incorporation in 1505[43] all apprentices had been required to be able to read and write, and had had to submit to examination, presumably in these skills, before being booked. The Seal of Cause also demanded that before a man was accepted as a freeman he

> knaw anotamea nature and complexioun of every member In manis bodie And in lykewayes he knaw all the vaynis of the samyn thatt he may mak flewbothomea in dew tyme And als thatt he knaw in quhilk member the signe hes domination for the tyme for every man aucht to knaw the nature and substance of every thing thatt he wirkis or ellis he is negligent.[44]

The intrant was also obliged to finance a "banquet" for his examiners which was held concurrently with the examination. After successful completion of the examination, he paid an

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[42] Ibid.

[43] The Seal of Cause 1505 (called "The Barboris Seill of Cause") printed in Collection of Royal Grants . . . op. cit. 1813.

[44] Ibid.

upsett (entrance) fee of £140 scots and took the oath of allegiance to the Incorporation. This latter ceremony was probably the most important part of the initiation. Oaths were an integral part of burgess and trade practice, and were held to be morally binding on the adherents. He also paid quarterly dues of £1.10.0 scots.

Freedom was limited to burgesses, which meant that all surgeon practitioners had to be resident members of the town. By an act of 1648, reaffirmed in 1696, no-one could be admitted unless he was the son or son-in-law of a freeman chirurgeon, or had served a full apprenticeship of five years.[45] To keep the calling restricted in size, master surgeons were only allowed to book one apprentice every three years.[46] Apprenticeship fees were an individual matter, but they appear to have been relatively uniform and static throughout the seventeenth and eighteenth centuries, at 1000 merks (approximately £55 st.)[47] The apprentice lived with his master, under his complete control.

Once admitted, the "freeman chirurgeon" participated fully in an oligarchic government of great equality. The

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[45] Surgs. Mins. Oct. 2 1696.

[46] I have not found the origin of this ruling but it was certainly operative in the middle of the seventeenth century. See R.E. Wright-St.Clair Doctors Monro London 1964, p. 8. See also Surgs. Mins. Aug. 3 1739.

[47] See indenture of 1653 published by John Gairdner in Historical Account. . . . op. cit. pp. 26-28, and the various indentures held in the archives of the Royal College of Surgeons of Edinburgh. [Archives - R.C.S.E.]

regulation limiting masters to one apprentice every three years was not only to keep membership limited; it was also to guard against one member engrossing all the apprentices.[48] Every issue relative to the affairs of the Incorporation was debated and voted on by the whole society. The annual leet (list) of six names presented to the Town-Council represented the winners of a ballot in which each surgeon had six votes.

Although barbers had been equally important as surgeons when the original Seal of Cause had been granted, by the second half of the seventeenth century they were losing their status within the Incorporation. After the amalgamation of 1657 surgeons were no longer designated "free barbers" as well as "free chirurgeons" in their act of admission.[49] Consequently, barber-surgeons began to disappear; in 1658 thirteen of the total membership of seventeen practiced barbering as well as surgery, whereas by the early 1680's only six barber-surgeons were to be found out of a total of thirty members.[50] The Incorporation was careful to retain its monopoly rights over barbers, however. In 1682 the Town-Council complained to the surgeons that there were virtually no barbers practicing in Edinburgh

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[48] See Surgs. Mins. Aug. 3 1739.

[49] C.H. Cresswell The Royal College of Surgeons . . . op. cit. 1918, p. 103.

[50] Ibid.

and ordered them to attend to the matter.[51] The Incorporation immediately began admitting barbers, but at a cost. Barbers were now required to sign an agreement that they would not practice surgery,[52] pay the substantial upsett fee of 500 merks (approx. £20 st.)--some having to pay as much as 800 merks--and quarterly dues of 13/4d scots, in order to practice in Edinburgh. (The Incorporation had no control over barbers in the suburbs.) But the barbers had no voting rights within the Incorporation, and the liberties they received could not be passed on to wife or son, as had previously been the case.[53]

Surgeon-apothecaries occupied a more ambiguous position within the Incorporation. They had a double allegiance; one to the Incorporation and one to their own fraternity. There were on the one hand surgeons who had taken the oath of allegiance to the Incorporation and followed all the traditional surgical practices. There were on the other hand apothecaries and members of the "fraternity of apothecaries and surgeon-apothecaries," a brotherhood containing apothecaries who had no allegiance to the Incorporation. This dual allegiance was not nominal. The

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[51] Ibid.

[52] Ibid. p. 105.

[53] Ibid. pp. 103 and 124-34 for a fuller discussion of the barber's situation.

candidate took two examinations; one to enter the Incorporation and another to enter the fraternity.[54]

Of the two institutions, the fraternity of apothecaries and surgeon-apothecaries attracted the more ambitious men. There were a number of eminent surgeons living in and around Edinburgh in the seventeenth century who remained surgeons only--Alexander Penicuik for example--but after the middle of the seventeenth century the dominant figures within the Incorporation were all surgeon-apothecaries. Thomas Kincaid and James Borthwick were the two men reputedly responsible for the merger in 1657, both men of social rank.[55] James Nisbet who was Deacon 1679-1680 had been apprenticed to a surgeon-apothecary in the 1650's. In 1662 he was admitted to the Incorporation as "master in the art of pharmacy and afterwards in the same year in chirurgery."[56] After practicing in Edinburgh for a decade he went abroad and was awarded an M.D. from Angers in 1670.[57]

As the host establishment the amalgamation in 1657 obliged the Incorporation of Surgeons to add botany and

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[54]See petitions of Thomas Edgar and James Turnbull in Scottish Record Office [S.R.O.] Extracted Decreets CS 29/Mar. 24 1682 no. 2.

[55]See for example Information from Mr. Alexander Hay, His Majesties Principal Apothecarie, John Kennedy, George Batherstoun and others, Apothecaries in Edinburgh Against the Pretended Incorporation of Chirurgeon Apothecaries n.d.

[56]The Register of the Privy Council of Scotland vol. VII, Nov. 17 1681.

[57]Ibid. See also petitions of Thomas Edgar and James Turnbull in S.R.O. Extracted Decreets CS 29/Mar. 24 1682

pharmacy to its apprentices' training. It had set up its own "physick garden" in 1658 (the first botanical garden to be established in Edinburgh), planting "medicinal plants and herbs at an expense of £200" in the grounds of its property in Curryhill Yards adjoining Edinburgh College. Here Thomas Kincaid and James Borthwick had no lack of students when they taught "the airt of pharmacy" there.[58] This instruction was underwrit by the extensive examination apothecaries had to take to enter the fraternity of apothecaries and surgeon-apothecaries.

We can see all this in the trial of one intrant, James Muirhead, in 1681.[59] Since the fraternity was a partnership, the appointment of "Visitors" and examiners was divided equally between apothecaries and surgeon-apothecaries. Muirhead was examined four times. On August 19, 1681 John Kennedy [apothecary] and George Stirling [surgeon-apothecary] were appointed visitors, and they with the rest of the brethren examined Muirhead on his knowledge of various "recipes," both "Gallenick and Chymick," in print and orally. The fraternity then appointed "Mr. James McMath [apothecary] to be his examinator, Thomas Dalrymple [apothecary] and Thomas Hendersone [surgeon-apothecary] to be visitors of the simples to be made us of

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no. 2, where it is noted that they had taken the examination of the Incorporation and the Fraternity.

[58] D. Guthrie Janus in the Doorway. London 1963, p. 111.

[59] S.R.O. Extracted Decreets CS 29/Mar. 14 1682 "Record of the Trial of James Muirhead by the Fraternity of Apothecaries and Chirurgeon-Apothecaries."

by him in his Compositione. And appoynted him to goe with the examinator and visitors with such others of the brethren as they sall please . . . for giving of his judgement and knowledge in the herbes and plants And they to report upon the 24 of this instant And that he be in readyness to answer to his examinators of his Knowledge in Pharmacie the said day and of the dry simples to be presented before him."[60] December 8 and December 15 Muirhead was examined again, this time on particular pharmaceutical compositions, by examiners again chosen alternately from the two institutions.

With the establishment of these examinations for apprentice apothecaries the Incorporation of Surgeons had appropriated control of all the medical skills. They trained their apprentices to be competent utilitarian general practitioners and within this general area of competence they acknowledged no gradation of rank. It is for that reason they opposed so strenuously the efforts of the physicians in Edinburgh to establish a College. Three times in the first half of the seventeenth century--in 1617-1621, 1633 and 1656-1658--the physicians had tried to establish a Royal Collge, and each time they had failed. The most extensive exposition of the physicians' objectives is contained in a lengthy document produced by the physicians involved in the 1656 negotiations.[61]

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[60] Ibid.

[61] "Account of the rights of the Professors of Medicine." The Mss. copy of this document is in the Archives of the

Essentially it is a historical survey of the organization of medical practice in Western Europe since antiquity, designed to demonstrate the necessity of having a local College of Physicians to regulate medical practice in any given area. The physicians' argument drew upon established customs in other European centres, where they argued a College of Physicians invariably existed with members "advanced in years, experienced in the art, judicious, prudent, Liberal, meak, not superstitious, etc."[62] The number of members would be presumably small, "elects" who would be leaders of the medical community and admit new members.

The document also stressed the need for orderly and rational organization amongst the medical orders. For example, apothecaries needed to be under the control of regulations covering the preparation of their products, drawn up by physicians in the form of a dispensatory, or pharmacopoeia. Surgery, too, should be subject to the authority of the physician. The authors of the document fully recognized the integration of the role of the physician and surgeon; "remedies by fire and knife" were as necessary as diet and medicines. "In all ages," they

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Royal College of Physicians of Edinburgh [Archives - R.C.P.E.] It is attributed to Sir Robert Sibbald, yet from internal evidence it seems more likely to have been composed in 1656.

[62] Ibid. pp. 8-9.

emphasized, "the physician of necessity must be a Chirurgeon, otherwise he was not to be called a compleat physician."[63] However, history showed that manual operators were generally more empirical, less learned and less judicious.[64] Physicians had therefore come to realize the necessity of incorporating surgery more fully into their own practice; they "did acquire to themselves so much skill in Chirurgery as to Learn to command these illiberal artificers just as an Architect Moderateth and Governeth the hands of his workmen."[65]

The authors of the document had little more respect for practitioners whose credentials came from a university. A university degree, it was argued, should not entitle a man to practice medicine until he had also been examined by a College of Physicians. Universities too often awarded degrees on scant evidence of competence, they believed, and they eloquently articulated their contempt for most of their contemporaries practicing medicine by outlining how princes and magistrates throughout Europe had from time to time established

> Societys and Colleges peculiarly of practising physicians, to see into the abuses and maladministration within their Precincts wrought not only be [sic] Empirics, Barbers, poisonsellers, and

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[63] Ibid. p. 8.

[64] The precise terminology of the authors was less charitable. "Chirurgeons have been heretofor always and still in all places where Medicine is orderly practised at best but Instruments and hand-servants to their Masters the Physicians."

[65] "Account . . ." op. cit. p. 6.

> the rest of that Illiterate Vulgar rabble, but also by those stupid ignorant thrasonic Codicilliari Doctors, with which kind of Cattle the (in this too Mercenary) promoters etc. in Universitys are apt to replenish the world with, never laying to heart the peoples danger, nor Minding the credit of their profession. . . .[66]

In addition to obvious anxieties about the number of incompetent people practicing medicine, we can also see how much the physicians assumed social and professional superiority were combined. The physician's assistant in his work of curing by diet and medicines would be "some scholar not unexercised in the art." When he was to cure by hand, however, he would be assisted by "a servant . . . who should do for him those things which the Dignity of the Art permitteth not himself to do . . . [who should be] a young man, ready handed, fearing nothing. . . ."[67] Analogies with other occupational positions of power were used; as all liberal professions required, ran the document, "subservient ministers (we see what inferiour officers a Commander at war, or Navigator, or Lawyer, and even Magistrates of all sorts have always Made use of), so we find that from all antiquity the rational physician hath made use of such manual operators."[68]

The physicians' attempts to establish a presence in Edinburgh had, therefore, social as well as medical

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[66] Ibid. pp. 66-67.

[67] Ibid. pp. 8-9.

[68] Ibid.

implications, and beneath it all lay important economic considerations. The physicians' need for a measure of control stemmed from the extremely precarious financial rewards he was likely to expect as a "professional" man. A physician's fee was exacted for his advice; it was purely an honorarium and he could not pursue a patient in court for non-payment. He was, therefore, extremely dependent upon the goodwill of the public in the form of their perception of his abilities. Moreover, since medicine was almost exclusively a curative art, his reputation rested to a large extent on the integrity of the prescriptions he wrote. Prescriptions were his personal property, and hence he needed the good will of the apothecary, and better still control of the dispensary. As William Cullen remarked in the late eighteenth century, "A physician may be judged of his prescriptions, and a College of Physicians will always be judged by those prescriptions they publish under the title of Pharmacopoeias."[69]

The document outlining the physicians' opinions was drawn up in the 1650's but the general principles upon which it was based had governed earlier projections for a Royal College in Edinburgh. We do not have details of the original proposal presented to James VI on his visit to Scotland in 1617, although it is clear that physicians were

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[69] W. Cullen "Account of Dr. John Clerk" in John Thomson An Account of the Life, Lectures and Writings of William Cullen M.D. 2 vols. London 1859, vol. I pp. 525-36.

not happy with the lack of control over the practice of medicine in Edinburgh as compared with other countries. They were disturbed, they told the king, by "the sad consequence, which they saw daily emerging from the defect of that order and Government in Medicinal Matters here, which they had observed the Countreys where they had travelled for Advancement in their studys become happy by."[70] James' warrant in 1621 confirmed the physicians' view of the superiority of medical organization in other countries. He endorsed the need for such a College, ". . . seeing it perteines to us out of our princelie and Royall cair to sie to the guid of that our Realme, and to appoint and establish tharin, sik convenient and cumlie order, as is observet in this our kingdome of Ingland, and other Foreigne Nationes, in the like caices."[71] Negotiations dragged on until 1633, causing "a buzzling and a Stour" on the part of the surgeons.[72] The proposal was finally defeated, not because of the surgeons, who probably had not yet established their power base within the Town-Council, but through opposition from the bishops on the councilsof James VI and Charles I, who continually obstructed its passage because

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[70] "Account . . ." op. cit. pp. 71-72.

[71] Sir Robert Sibbald "Memoirs of the Royal College . . ." op. cit. 1837, p. 3.

[72] "Account . . ." op. cit. p. 72.

"the petitioners most of them inconform to the Innovations in Worship, they were then establishing."[73]

Nevertheless, by 1633 the physicians had put together an extensive proposal projecting a "Colledge and Incorporation of the Faculties of Medicine" to consist of a federation of medical societies to be organized in Scottish towns and composed of mature (men with over twenty years medical experience) graduates in medicine.[74] This proposal outlined in practical terms the application of those ideas expressed in the later document. It projected a federation with all the legal powers of a Corporation, i.e. to own property, receive legacies, prosecute in Courts, etc. A President, Councillors and Treasurer were to be elected annually "and all other officers neadful for the services of the said Colledge and Incorporation,"[75] but because of the size of the whole federation the President and his four Councillors were to have power to act independently. Each individual society was to appoint two censors annually, who together with an apothecary would inspect apothecary shops in their area.

All the political power of this federation was to lie with the Edinburgh physicians. The "first Elects and Intrants of such a corporatione" were to be the "Graduate

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[73] Ibid.

[74] Sir Robert Sibbald "Memoirs of the Royal College . . ." op. cit. 1837, pp. 7-14.

[75] Ibid. p. 8.

Doctors now ther many years resident within the said Towne of Edinburgh"[76] who were all to be specifically named in the letters patent. Moreover, the President and Councillors of the national body were only to be chosen from the Edinburgh fellowship. It was the only one specifically mentioned in the proposals, power being granted to Edinburgh graduates to associate into a fellowship of not more than nine members, vacancies to be filled by internal election, or in the event of the death of all simultaneously, by the Secret Council.

The national College was to have wide powers over apothecaries, surgeons and graduate physicians in the whole country. A book of rates was to be drawn up to regulate the sale of drugs and medicines, and druggists were prohibited from selling dangerous and powerful drugs to any but apothecaries or physicians. All surgeons in the nation were to be examined by the College "with concurrence of the masters and freemen in Chirurgerie within Edinburgh,"[77] and no surgeon in Edinburgh was to perform major surgical operations, or testify in court, except with the advice of a fellow of the Edinburgh College. No-one was to practice as a physician unless he held a degree from a foreign university or from the national College, and to this end all existing practitioners were ordered to appear before the

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[76] Ibid.

[77] Ibid. p. 10.

Edinburgh College within six months to present their credentials and submit to re-examination. For the future, licences to practice as physicians would be under the control of the national College, but promotions to the degree of doctorate were only to be conducted by the Edinburgh fellowship. The national College and the Edinburgh fellowship jointly were to have power, under the protection of the king and Secret Council, to fine and imprison offenders, justices and sherriffs being obliged to enforce the College's sentences. The College also claimed exemption from all financial burdens of burgh residents, from the obligation to bear arms and suffer impressment, and from the obligation to quarter soldiers.

As we have already indicated, nothing came of these proposals. By 1656, however, unification with England and the religious tolerance of Cromwell's regime made the political climate in Scotland more favourable, and a new proposal was formulated, again with strong international influences. A committee of five physicians--three Scots and two English--was appointed by the Scottish Lords in June 1656 to enquire into "some complaints" given in to them.[78] Out of these enquiries a new patent was drawn up and forwarded by Lord Broghill, President of the Scottish

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[78] "Account . . ." op. cit. p. 73. The nature of the complaints is not given, but it was almost certainly related to the amalgamation of surgeons and apothecaries which was happening at that time.

Council, to Cromwell in November of that year.[79] The physicians in Edinburgh also solicited the advice of the College of Physicians in London, turning to it in May 1657 as the vanguard in the formation of a "Republic of Medicine" which would transcend national boundaries. "You will," they wrote,

> be promoters of our Medical Republic; thus the splendour of your name will irradiate the darkness of Scotland and it will not be extinguished either by any vicissitude of human affairs or the devouring force of time, but will be consecrated to eternity.[80]

A copy of the statutes of the English College was sent to the Scottish physicians "in order that they might frame their own more accurately on the model of ours."[81]

The proposals of 1656, however, were much more constrained than those of 1633.[82] There was no mention of a federation, and the College of Physicians was to consist only of the Edinburgh fellowship, the members again being specifically named. The internal political organization of the College was not spelled out, nor the mechanics of entry. The College was still to administer the practice

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[79] See letter from Broghill to Cromwell Nov. 24 1656 in "Account . . ." pp. 73-75.

[80] W. Craig History of the Royal College of Physicians of Edinburgh Edin. 1976, Appendix b p. 1038.

[81] Ibid.

[82] Sir Robert Sibbald "Memoirs of the Royal College . . ." op. cit. 1837, pp. 14-18. It could be inferred that this reflects an element of compromise in the physicians' new plan. It could also be due merely to the fact that we lack a full account of this second proposal.

of medicine over the whole country, through the control of physicians' licences to practice, but nothing was said of the College's right to promote physicians to the degree of Doctorate; it merely insisted that professors of medicine in the universities should be chosen only from the fellowship. The College claimed no specific powers over surgeons, although physicians outwith Edinburgh and Glasgow were to be allowed to practice surgery. Censors were again proposed to inspect apothecary shops, but there was no mention of a book of rates. It was conceded that magistrates could be present at the examination of intrant apothecaries, and with regard to illegitimate practitioners, "the party so offending sall be fyned at the good discretion of the magistrate of the place where the offence is committed."[83]

The physicians' compromise (if indeed it was a compromise) remained fruitless. However altruistic their vision of a "Republic of Medicine" might have been, they had to deal with the "vicissitude of human affairs" in Scotland. The Faculty of Physicians and Surgeons in Glasgow objected, and Aberdeen university, which had a professor of medicine, was particularly opposed to any interference in its affairs.[84] The Incorporation of Surgeons in Edinburgh,

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[83]Sir Robert Sibbald "Memoirs of the Royal College . . ." op. cit. 1837, p. 18.

[84]See Sibbald Mss. Archives - R.C.P.E. "Articles debated and advised by the physicians met at Dundee July 17 1657."

as we know, would brook no opposition now to its local power; by 1656 they had a powerful ally in the Town-Council of Edinburgh. As Robert Sibbald later observed, ". . . the opposition [in 1656] did mainly arise from the cite of Edinburgh and thro their influence the rest of the Boroughs of the nation . . ."[85]

To this accumulation of opposition the Town-Council made its own particular contribution. When the "College of Arts and Theology" had been established in 1582 in Edinburgh the principal administrative authority was the Town-Council.[86] It controlled the administration of College property, the appointment and dismissal of professors (with the advice of ministers of the church) and the power to confer degrees. This last had not been part of the original charter but had nevertheless been assumed almost from the inception of the College by the award of a degree in Arts, and was confirmed in the parliamentary ratification of its charter in 1621.[87] The Town-Council guarded these powers jealously. Throughout the seventeenth century the magistrand class laureated publicly, in the presence of the magistrates, and an external supervisor, the Rector, was established to be "the eye of the Council of the Town . . ."[88]

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[85]Sir Robert Sibbald "Memoirs of the Colledge of Physicians" op. cit. 1838, p. 18.

[86]Alexander Grant The Story of the University of Edinburgh Lond. 1884.

[87]Ibid.

[88]Ibid. p. 203.

The office was nominally supposed to be held by an independent witness, but by 1665 it had been settled on the Lord Provost.[89]

Moreover, it seems clear that from early in the seventeenth century the Town-Council was interested in expanding the College. A separate chair of Divinity was established, a professor of Hebrew was appointed in 1642, and a chair of mathematics added in 1674.[90] By 1670 the idea of converting the College into a university, which would give it wider degree-granting powers, was being mooted. An anonymous proposal was received by the Deacon of Surgeons on August 22 1670 for an act of parliament "for erecting the Colledge of Edinburgh into ane Universitie,"[91] The surgeons replied in support of the proposal, under certain conditions, as one calculated to be useful, and a "caveat against all hazards by a Colledge of Phisitians."[92]

By the 1680's, therefore, the organization of medical practice in Edinburgh had assumed a peculiar complexity. The Incorporation of Surgeons, through their amalgamation with the apothecaries, had taken the political initiative, engrossing, by legislative means, all the

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[89] Ibid. p. 211.

[90] Alexander Grant The Story of the University of Edinburgh op. cit. 1884.

[91] Surgs. Mins. Aug. 22 1670.

[92] Ibid.

medical orders. Physicians there were, but they were unorganized and seemingly incapable of penetrating the combined opposition of local political forces. The physicians did achieve institutional recognition, however, and the means by which it was accomplished is the subject of the next chapter.

CHAPTER II

THE ESTABLISHMENT OF THE ROYAL COLLEGE OF PHYSICIANS

> No Man can with any advantage to the Publick, or peace to himself, practice Physick, but he who being blessed with a happy Genius for Learning, and a sound Judgement to discover matters aright, hath by a close application to the Study of Medicine . . . formed to himself a true Notion of the nature of every Disease, with its Signs and Symptoms, [and] laid down a just method of Cure . . . from this naturally follows, that Men of small Capacities, less Learning, and whose Education hath been quite turned into the road of manual Operation, can never pretend to be duly qualified to practice Medicine.[1]

The complacency of the Incorporation in 1670 was ill-founded, although understandable. After the Restoration it had felt itself secure from renewed proposals from the physicians. No patent could again issue from Westminster, and with access to local government and the Scottish parliament, it felt its interests well protected. What it could not anticipate, however, was the crisis of the monarchy in the 1680's, when the future James VII was to turn to his Scottish subjects, granting them favours in an effort to secure the loyal support which was becoming so conspicuously absent in England.

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[1] *Letter to a Gentleman . . . op. cit.* 1707, p. 15.

During its early years the College of Physicians had none of the corporate strength which characterized the Incorporation. Individual members were respected by the community but as a group they had no recognized claim to power. The College's influence was small, its funds were smaller, and it hesitated to use additional powers it was granted by the Court of Session and the Privy Council. This was partly because of the character of the original fellows. They were not politically naive; they were scholars and country gentlemen and their political consciousness was dictated by the decree of high authority--the king and his councils. And they assumed everyone else's was too. They were not prepared to take seriously what they considered the insubordinate squabblings of local dignitaries. Moreover, individual members lacked an identity of interests; they were in no sense a united caste or class of men. Consequently, the College was a factious institution. The fellows quarrelled about everything, but principally about professional competence. Their quarrels gave rise to a major confrontation in the 1690's, which split the College into two factions.

All this was changed by the early years of the eighteenth century. Internal conflicts were resolved and admissions regulations established which increased numbers and altered the character of the College. The older generation of mature, cosmopolitan physicians and scholars was replaced by a new generation of younger physicians, just

as determined to maintain the exclusive function of the physician but more sensitive to national issues and local developments.

I

Robert Sibbald (1641-1722) is usually viewed as the driving force behind the successful establishment of the Edinburgh College of Physicians in 1681, although Andrew Balfour (1630-1694) also played an important role.[2] Both men were urbane, cosmopolitan scholars of wide learning. Balfour was the youngest son of Sir Michael Balfour of Denmiln, from an old Fife family with connections in legal and academic circles. Studying medicine in London and Paris after graduating from St. Andrews in 1650, he had travelled widely on the Continent before returning to Scotland in 1655. He brought back with him a wide variety of historical, philosophical and scientific books, manuscripts and artifacts, the value and extent of which, it was claimed, had no equal in Scotland.[3] It is claimed he introduced a number of technological innovations into Scotland, such as the manufacture of paper and new surgical

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[2]For an account Sibbald's life and his activities with regard to the establishment of the College of Physicians see Robert Sibbald "Memoirs of My Life" in Francis Paget Hett Memoirs of Sir Robert Sibbald Edin. 1932, pp. 49-99, and Robert Peel Ritchie The Early Days of the Royal Colledge of Phisitians Edin. 1899. For Andrew Balfour see "Memoirs of Sir Andrew Balfour" in J. Walker Essays on Natural History and Rural Economy Edin. 1808, pp. 347-69.

[3]"Memoirs of Sir Andrew Balfour" ibid. 1808, p. 353.

instruments for the dissection of the human body. Robert Sibbald was also the son of a distinguished landed family. Like Balfour, he had travelled abroad after graduating from Edinburgh College in 1659.[4]

On their return to Edinburgh in the 1670's one of their interests lay in the same area as the surgeon-apothecaries, i.e. in developing the study of botany. They encouraged James Sutherland, a man who had been appointed Intendant of His Majesty's Garden at Holyroad House in 1670, carrying with it the munificent salary of £60 st.,[5] to offer classes in botany.[6] In 1675 this venture was moved, through the assistance of the Incorporation, "on being assured that they [Sibbald and Balfour] would not initiate colleges . . ." to a site in Trinity Hospital.[7] Sibbald and Balfour were appointed visitors.[8]

Perhaps because of their pact with the Incorporation, we know of no further association between the two physicians and James Sutherland, but in 1681 we find them initiating a pedagogic enterprise in another direction. Obviously dissatisfied with the isolation of physicians in Edinburgh,

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[4]Robert Sibbald "Memoirs of My Lyfe" op. cit. 1932.

[5]S.R.O. GD/18/5257. We don't know who sponsored the appointment.

[6]See H.R. Fletcher and W.H. Brown The Royal Botanical Garden of Edinburgh 1670-1970 Edin. 1970. See also A. Cunningham "Aspects of Medical Education . . ." op. cit. 1974, pp. 251-260.

[7]Sibbald "Memoirs of My Lyfe" op. cit. 1932, p. 22.

[8]Ibid.

they began to conduct fortnightly meetings with other physicians to exchange scientific and medical information.[9] Archibald Pitcairne (1652-1713), a brilliant, yet erratic, personality who had studied for the ministry and the law before finally settling upon medicine and taking a degree at Rheims in 1680, was one of their colleagues; another was Sir Thomas Burnett (1638-1704), the second son of Robert Burnett, Lord Crimond, and older brother of Gilbert Burnett.[10] He too had travelled extensively, taking a medical degree in Montpellier in 1659.

They were all men whose medical knowledge and values had been shaped abroad, and their meetings were held to keep alive the ties of communication with the international scientific world. As Sibbald explained, they discussed "letters from these abroad, giving account of what was most remarkable a doing by the learned, some rare cases which had happened in our practise, and ane account of Bookes, that tended to the improvement of medicine or naturall history, or any other curious learning. . . ."[11] It was at one such meeting that Sibbald raised with them the possibility of obtaining a charter for the erection of a College of Physicians. His proposal was not an idle speculation,

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[9]Robert Sibbald "Memoirs of My Lyfe" op. cit. 1932, p. 75.

[10]Gilbert Burnett (1643-1715). Made Bishop of Salisbury by William III.

[11]Robert Sibbald "Memoirs of My Lyfe" op. cit. 1932, pp. 75-76.

for he had an inherited commitment to the idea. His uncle, George Sibbald, had been the principal negotiator in the 1617-1633 attempt, and Robert had in his possession the documents of all the previous projects, including the 75-page "Historical Account of the Rights of the Professors of Medicine."

Sibbald had the additional advantage of a connection at court. In the late 1670's he had become a close personal friend as well as physician to the Earl of Perth,[12] who arranged for Sibbald to be appointed "geographer for the kingdome of Scotland" as well as the king's physician in Scotland.[13] When the Duke of York came to Edinburgh in late 1680, therefore, Sibbald was able to approach him with the warrant for a College signed by James VI in 1621.[14] The Duke "said with much satisfaction, he knew his grandfather's hand and he would see our bysness done," recorded Sibbald, "and from that moment acted vigourously for us."[15] The Duke of York's power was not unlimited, however, and the

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[12]James Drummond, 4th Earl of Perth (1648-1716). He became Chancellor of Scotland in 1684.

[13]Robert Sibbald "Memoirs of My Lyfe" op. cit. 1932, p. 74.

[14]See Robert Peel Ritchie The Early Days . . . op. cit. 1899 for an account of Perth's assistance to Sibbald, although Ritchie finally concludes that credit for promoting Sibbald's plans for a College of Physicians should rest with Sir Charles Scarborough, the king's physician, rather than Perth, who had little influence in 1680.

[15]Robert Sibbald "Memoirs of My Lyfe" op. cit. 1932, p. 79.

petition drawn up and brought before the Privy Council in September 1681[16] was debated in committee by all interested parties, "amongst whom," a later President of the College commented acidly, "the then Chirurgeon-apothecaries and their Trusty and never failing patrons the Town-Council of Edinburgh were the most violent."[17]

The patent which finally received royal assent in November 1681, therefore, was in principle the same as the 1656 proposal, but again concessions had had to be made.[18] The College was given jurisdiction only over Edinburgh and suburbs, and if it summoned apothecaries or surgeon-apothecaries who were burgesses of Edinburgh, then a magistrate or baillie was required to be present. The College had the right to inspect apothecary shops in its area of jurisdiction, but in conjunction with a surgeon-apothecary. It was given powers to make "rules, precepts, acts and Statutes for promoting the science of medicine, and for duly ordering the practice of the same and for the good government, order, rule and correction of the said College and Community and of all practising the said profession within the said [jurisdiction] . . .",[19] but any laws it

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[16] Register of the Privy Council of Scotland 3rd ser. vol. VII, Sept. 24, 1681, p.205.

[17] Wm. Eccles Historical Account of the Rights and Privileges of the Royal College of Physicians of Edinburgh Edin. 1707 p. 2. I have not found any record of petitions presented to this committee.

[18] The full text of the patent can be found in The Royal College of Physicians of Edinburgh. History and Laws 1925, pp. 246-56.

[19] Ibid. p. 251.

made had to be ratified by the Town-Council, and it was specifically prohibited from establishing a medical school.[20] It had the right to demand that all physicians practicing within its jurisdiction should possess "a Warrant and Diploma" granted by the College,[21] but it had no control over the issue of medical degrees; it was compelled to issue a licence to practice in Edinburgh to all who applied with a medical degree from a Scottish university without further examination.[22]

The College created by this patent was to consist of twenty-one men, all specifically named,[23] and "all others who afterwards shall by them be chosen into their Society.[24] The internal political power structure, however, was only vaguely defined. On the one hand they were to become "in all future time a College Society and Incorporation" and "they shall be united and conjoined into one body community and College in all future time."[25] At the same time, the charter called for the annual election of a Council of seven "the best informed, the most discerning, and the most conversant with the profession of medicine,"[26]

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[20] Ibid. pp. 254-55.

[21] Ibid. p. 251.

[22] Ibid. p. 255.

[23] See Appendix I. "Original Fellows of the Royal College of Physicians of Edinburgh."

[24] Ibid. p. 249.

[25] Ibid. p. 249.

[26] Ibid. p. 250.

which was to elect a President and two Censors. But what powers did the President and Council have? Very few, if we read the words of the charter. The President and Censors had the power to prosecute unlicenced physicians practicing within their jurisdiction, but the right to make "rules, precepts, acts and Statutes" and to award licences was vested in "the said President and College."[27]

Moreover, there was no word in the charter on how future fellows were to be introduced. A three-tier order of membership--licentiate, "candidat" and fellow--was erected, with a fee of £10 st. to be paid for entry into each category and an initial examination of licentiates.[28] Anyone could petition to be examined for a licence, and a graduate from a Scottish university could petition for a licence without examination. To keep the fellowship small, however, entry into this body was to be by invitation only. "When Colledge requires to call Candidat to be fellow" ran their ruling, "the oldest Candidat shall be the person required to enter."[29] By 1694 only nine of the original members were still active in the College, and only three new

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[27] Ibid. p. 251.

[28] Minutes of the Royal College of Physicians of Edinburgh [Phys. Mins.] Aug. 7 1682. The designation 'candidat' was unused after the first decade or so. In 1693 total fees were reduced to 300 merks (approx. £16 st.) for licentiates and another 100 merks for fellows. The fees remained fairly constant until the 1750's.

[29] Phys. Mins. Aug. 7 1682.

fellows[30] had been admitted.[31] It also seems the original fellows tried to keep membership selective. Fellows were not obliged to be permanent residents in Edinburgh, and could (as in the case of Matthew Brisbane who lived in Glasgow) be drawn from other cities. From the frequent oscillation in the required quorum, reduced for example from nine to six in 1693 "because of the death of some and absence of several members of the Colledge liveing [sic] at a Distance from the Town"[32] it appears many of the fellows were non-residents.

The Council of the College was drawn from the ranks of a small number within this tiny membership. Stevenson, Balfour and Sibbald "were Chiefe,"[33] dominating the positions of President and Censors. Stevenson was elected President in December 1682--most probably on the basis of seniority--and with the exception of 1685 and 1686, when Sibbald and Balfour were respectively President, Stevenson held that

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[30]Charles Oliphant, 27 years old and recently returned from studying and obtaining an M.D. in Europe; William Eccles, whose medical degree is not recorded and who, it would seem, had very little medical experience--he held a post in the Bill Chamber in 1687; and Thomas Spence, of whom nothing is known.

[31]Precise membership and general activities of the College are difficult to determine accurately during the first decade, because the Minute Books for Jan. 1685-Mar. 1693 are missing.

[32]Phys. Mins. Mar. 21 1693.

[33]National Library of Scotland [N.L.] Mss. 2257 "Verses on the RCPE 1685."

position continuously until 1694.[34] Pitcairne and "some others" provided a faction of supportive acolytes.[35] In 1685 discontent with this monopoly was expressed by Lermonth, Sinclair, Trotter, McGill and probably others,[36] but apart from general derogatory remarks about the professional abilities of some, and impatience with their inactivity--caused partly it was implied by an over-fondness for claret--no specific grievances were outlined.[37]

The allusion to the inactivity of the leadership probably referred to the College's attitude towards the political misfortunes of the surgeon-apothecaries. These reversals will be outlined later, but before discussing the College's negative attitudes we should establish where its positive energies were directed. The Council knew exactly what role it wanted the College to play. Corporately it was heir to the accumulated medical wisdom of the ages, and this wisdom was largely perpetuated through the production of medical treatises in Latin. For this a man was presented with a medical degree in European universities, and the fellows of the College in Edinburgh wished to bring

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[34]This cannot be verified absolutely because the Minute Books for the period are missing, but see the Archives of the Royal College of Physicians of Edinburgh Library [Archives - R.C.P.E.] Misc. Papers 100 and Robert Sibbald "Memoirs of My Lyfe" op. cit. 1932, p. 96.

[35]N.L. Mss. 2257.

[36]Ibid.

[37]Ibid.

their institution into line with what they had experienced themselves. They wanted to improve medical education in Scotland academically and to create a community of learned medical scholars. As William Eccles, President of the College in 1707, remarked, a good medical practitioner needed a liberal education, by which he meant

> the breeding at Schools and Colleges, so as to acquire a competent knowledge in the Latine and Greek Tongues, Philosophy and the other liberal Sciences, and a continuing in the prosecution of these Studies for such a time, as makes a Man that applys himself to the Studies of Divinity, Law, Medicine, etc. capable to understand such standard Authors, as have written in the different Languages upon the subject to which a Man applies himself. . . .[38]

One of the first Acts laid down that all physicians wishing to practice within the jurisdiction of the College must possess a university degree,[39] and the examination of candidates was largely designed to test their knowledge of classical scholarship.

These regulations did not wholly answer the purpose, however, because of the clause in the College's patent requiring it to licence without examination any candidate who applied with a Scottish degree. As it complained to the Earl of Perth in 1686, "all the Apothecaries and Surgeons wee have will goe and be graduat at Aberdeen. . . ."[40]

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[38] Wm. Eccles Historical Account . . . op. cit. 1707, p. 10.

[39] Phys. Mins. Aug. 7 1682.

[40] Quoted in Wm. Craig History of the Royal College . . . op. cit. 1976, p. 386.

This situation, it claimed, was "contrair to the practice of other nationes where Colledges are erected and particularly of England, where the Graduats of Oxford and Cambridge are not admitted to the Colledge of London without a new examination."[41] When the Edinburgh College first received its patent it had tried to encourage the universities to be more selective when issuing medical degrees. It had agreed to the clause in its patent prohibiting it from establishing a medical school, wrote the authors of the letter to Perth, only because the universities had undertaken to take "a serious and exact tryall before Graduation, and that the samen should be by a duly constitute Faculty of Medicine as is usual in the Universities of other nations."[42] Such a faculty, they wrote, could not consist of fewer than three professors "who ought to be constant residenters and teachers of the several pairts of Medicin for the instructing of youth in that study. . . ."[43]

This letter to Perth came as a result of an abortive attempt to establish such a faculty at Edinburgh. The plan was part of a wider scheme of James VII's to transform the Towns College into a university. In 1688 James had given his name to a deed[44] acknowledging the College as a

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[41] Ibid. p. 384.

[42] Ibid. Emphasis in original.

[43] Ibid.

[44] "Signatur of Confirmation in Favour of the university of Edinburgh 1688", printed in Alex. Grant The Story . . . op. cit. 1884, pp. 253-57.

university, endorsing the existing rights of the Town-Council in College affairs, but at the same time vesting the power of conferring degrees in "the Principall as Vice-Chancellour of the Universitie ex officio with the advice and concurrence of the respective faculties which the receivers of the said degree shall be of. . . ."[45] That the Town-Council should now acquiesce in an arrangement which took away powers it had jealously guarded for a century was due to the fact that since 1681 the election of magistrates had been very much according to the king's pleasure. The Principal of the university from 1685-1690, Alexander Monro, spoke warmly of the Lord Provost, Sir Magnus Prince, for his understanding and lack of interference in College affairs, a position quite at variance with the Town-Council's past and future insistence upon an active role in College affairs.

Three professors of medicine, all fellows of the College of Physicians, were appointed in 1685, in what was obviously the first stage of this plan. The first official reference to the College as a university, as Grant has pointed out, came in the act of the Town-Council of March 24 1685 in which Robert Sibbald was appointed professor of medicine, and was repeated when two more physicians--Archibald Pitcairne and James Halket--were appointed six

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[45] Ibid. p. 256.

months later.[46] Sibbald was appointed "by missive" of the Earl of Perth,[47] who was also to help draw up the deed granted by James to the Towns College in 1688.[48] Sibbald and Pitcairne had little in common professionally, but they were united in their antagonism to the Kirk. It is probably for this reason they received James' patronage.

James' plans were still-born. Sibbald, "for fear of his life,"[49] fled to London in February 1686 when a mob of three or four hundred besieged his house intent upon killing him because of the rumour that he had been instrumental in the conversion of the Earl of Perth to Catholicism.[50] In June of the same year the Scottish parliament refused to recognize an act of James VII appointing the Bishop of Edinburgh, John Paterson, Chancellor of the university. The College of Physicians, therefore, took the matter into its own hands by writing to Perth and Melfort requesting that the College itself be given the power to grant medical degrees.[51] None of the universities

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[46] Ibid. pp. 224-25.

[47] Sir John Lauder of Fountainhall Chronological Notes of Scottish Affairs, From 1680 till 1701; being Chiefly Taken from the Diary of Lord Fountainhall Edin. 1822, p. 127.

[48] Alex. Grant The Story . . . op. cit. 1884.

[49] Fountainhall Chronological Notes . . . op. cit. Jan. 30 1686, p. 159.

[50] Robert Sibbald "Memoirs of My Lyfe" op. cit. 1932, p. 89.

[51] Wm. Craig History of the Royal College . . . op. cit. 1976, p. 384.

in Scotland, it pointed out, had met the requirement of providing a faculty of medicine, and therefore "oure Universities cannot regularly confer any degrees in Medicin untill they be provided a sufficient number of professors to constitute a facultie of Medicine. . . ."[52] The necessary warrant was issued by the king in November 1686, and read "Warrant for a Grant in favour of the Colledge of Physicians of Edinburgh authorizing them to try and examine Graduates in Medicine befor their being allowed to practise there."[53]

The Warrant was never utilized. After the presbyterian assumption of control of the Towns College in 1690 the three professors of medicine were never acknowledged by the Town-Council or the Towns College, and neither the College nor the individual professors ever tried to use these titles. Sir Robert Sibbald advertised a private course of lectures in 1706, but did not give himself the title 'professor of medicine'.[54] James Halket was President in 1705 when the university began to invite the College to participate in examining medical degree candidates, but Halket was not mentioned particularly and did not participate in the examination of the candidate.[55]

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[52]Quoted in ibid. p. 385.

[53]Ibid.

[54]Alex. Grant The Story . . . op. cit. 1884, p.227. See also A. Cunningham "Sir Robert Sibbald and medical education, Edinburgh 1706" Clio Medica 13 (1978) pp.135-161.

[55]Phys. Mins. Apr. 5 1705.

II

With concerns such as we have outlined, it is not surprising to find the College unenthusiastic about the initiatives taken by the Incorporation of Surgeons in Edinburgh. One of the justifications for the establishment of their own College had been, wrote Sibbald, "to secure our priviledges belonged to us as doctors, and defend us against the incroachments of the Chirurgion Apothecaries, which were insupportable."[56] They were insupportable because they interfered with the close relationship the physician needed with the apothecary.[57] The men in Edinburgh recognized fully the physician's need for the good-will and loyalty of the apothecary and his subservience to the needs of the physician. The complete amalgamation of the apothecaries with a rival institution gave the practicing physician enormous problems. A physician, they argued, could not afford to have dispensing left as the part-time and often subsidiary occupation of one who was often out attending patients of his own. Surgeon-apothecaries left their shops in charge of apprentices, they claimed, who might dispense drugs wrongly, with the result that the physician could lose his patient and his reputation; or the physician might find the shop vacant, with the same result

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[56]Robert Sibbald "Memoirs of My Lyfe" op. cit. 1932, p. 78.

[57]See p. 27.

that "the opportunity lost for the patient."[58] The College of Physicians played an active role opposite the Incorporation of Surgeons during a portentous legal battle fought between the Incorporation and some apothecaries in the early 1680's.

The legal confrontation grew out of the Incorporation's continuing efforts to impose its monopoly over apothecaries in Edinburgh. Apothecaries could become surgeon-apothecaries by taking the examination of the fraternity, but unless they also took the examination of the Incorporation they could not legally practice phlebotomy or apply sear-clothes. However, the private nature of the relationship between practitioner and patient made it difficult for the Incorporation to prevent apothecaries who wished to from performing these services. In the late 1670's, in what was obviously an attempt to block this loophole, the Incorporation secured a burgh act ordering that any unfreeman found carrying "basins or a great case or truce with razors or lancis" should be deemed guilty and required to acknowledge his guilt under oath, without further evidence.[59]

In taking this step the Incorporation miscalculated the extent to which it could push its mandate. The apothecaries were in a stronger position than the barbers; they were wealthier, and in the fraternity of apothecaries and

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[58] Letter to a Gentleman . . . ibid. 1707, p. 2.

[59] C.H. Cresswell The Royal College of Surgeons . . . op. cit. 1918, p. 114.

surgeon-apothecaries they had an organizational structure where they could discuss and formulate grievances. When in May 1680 the Incorporation prosecuted one member of the fraternity, the apothecary Patrick Cunningham, under this new ordinance, Cunningham and eleven other apothecaries,[60] many of whom were members of the fraternity, protested before Lord Forrett, the Lord Ordinary. As one commentator saw it, the issue was "a single debate of private rights. . . ."[61]

At this point, however, the cause took on a new dimension. After Lord Forrett had declared the case to be heard in presence, the "Sumons of Reduction and Declarator" raised by the apothecaries contained three more issues they wished the Lords to consider: concerning the monopoly the surgeons claimed over the practice of phlebotomy and the application of sear-clothes, the monopoly they claimed over the citizens of Edinburgh, and "that the Chirurgeons might hold by their own trade and not exercise the airt of Chirurgerie and pharmacie."[62] Moreover, this new Summons took on a more aggressive tone in that it was now labelled

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[60] N.L./6.162 (85) "Decreet of Separation" 1682.

[61] Archives - R.C.S.E. "Particular Condescence One [sic] some Parts of the Decreet of 1682 by which it is manifest that both the Points to be informed on are Res Judicatae." n.d.

[62] Archives - R.C.S.E. "Notes of Decreet at the Instance of the apothecaries in Edinburgh against the Chirurgeon-apothecaries there." 1689.

"Apothecaries against Surgeon-Apothecaries and the Provost, Baillies and Council of Edinburgh."[63] The case became a cause célebre. For the surgeons it was clearly a matter of vital importance, and all regular business was put aside during 1681.[64] The case lasted from May 1680 until March 1682, and "there was never a Cause, since the Erection of the College of Justice, pleaded with greater Heat and Eloquence. . . ."[65] Each side brought in council of the most eminent lawyers of the day; acting for the surgeon-apothecaries were Sir George Mackenzie, king's council, Sir John Lauder and Mr. Colin Mackenzie, and for the apothecaries were Sir George Lockhart, Sir John Dalrymple and Mr. (later Sir) David Cunningham.

Eventually, although the surgeons maintained their traditional monopoly over the practice of phlebotomy, "and upon the Burgesses thereof, except in the cases of necessity and Charity . . . ,"[66] on the critical issue of the amalgamation of surgeons and apothecaries their Lordships found for the apothecaries, concluding that "the Employments of

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[63] Ibid.

[64] See Archives - R.C.S.E. Bundle 125 "Information for James Muirhead" 1682. See also in the Archives - R.C.S.E. the accounts of Andrew Young, W.S., to the Incorporation itemizing over half-a-dozen separate submissions he drew up for them between Feb. and Nov. 1681.

[65] Wm. Eccles Historical Account . . . op. cit. 1707, p. 15.

[66] "Decreet of Separation" op. cit. 1682.

Chirurgery and Pharmacie being two distinct Employments . . . must thereafter within the City of Edinburgh and Libertys of Edinburgh be exercised by distinct Persons . . . and that albeit Chirurgeons may buy and sell Simples as an Drogest or Merchand may do and compound such Drugs as are necessary for Chirurgical and external applications; yet that they cannot compose any Medicaments to be taken internally by the Mouth. . . ."[67] Moreover, the Court stripped away most of the additional powers the Incorporation had secured during the previous few decades; besides annulling the act of 1657 it rescinded the acts of 1641, 1643 and 1655.[68]

On whose initiative the cause was converted from an internal squabble amongst the surgeons to a major constitutional battle on burgh affairs is not known. Perhaps it was the apothecaries alone, wishing to be free from the intolerable demands of the Incorporation. They certainly had at least the sympathetic support of the Court of Session, however, because to bring the question of incorporation rights before them the Lords had acquiesced in a legal manoeuvre not entirely regular. The Declarator

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[67] Ibid.

[68] Ibid. "As to the Act of 1655, no shadow of reason can be given for it remaining, except the unwarrantable gratifying of the Surgeons for the countenance and continuing of the factious designs of the Magistrates." C.H. Cresswell The Royal College of Surgeons . . . op. cit. 1918, p. 117.

originally brought by the apothecaries to the Lord Ordinary was not the same as the one debated before the Court of Session, and although such manipulations were to become increasingly common, council for the surgeon-apothecaries were legally quite correct in arguing that the Lords had no right to admit into the apothecaries' Declarator issues of a general nature which had not been part of the original plea.[69]

In its justification for the decision the Court articulated its opinion on the innovations in medical organization introduced by the surgeon-apothecaries. It had the same viewpoint as the physicians; it looked to universal practice for its guidelines. It is therefore not surprising to find it looking to the physicians (at this point there was no College) for professional guidance and advice.[70] ". . . [B]ecause the Noble and Supream Faculty of Medicine," ran the Decreet,

> is in itself a free and liberal science, and ought in all the Branches thereof be kept and used as freely as any other liberal Science. . . . And therefore all Limitations or

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[69]See Archives - R.C.S.E. Bundle 125 "Some observations which may be the ground of a petition or pleading in favour of the Chirurgeon-Apothecaries against the Simple Apothecaries." June 1699; and Archives - R.C.S.E. Bundle 117 "Summons of Reduction Dunlope & other Chirurgeon-Apothecaries Against Wallace and others Apothecaries" 1698.

[70]See the denial by William Eccles in Historical Account . . . op. cit. 1707, p. 16, of the surgeon's accusation that "the Decreet was obtained by the great interest of the Physicians with the Land-Mercat Club . . . at that time, several of them being either so nearly related in Blood, or in so strict correspondence with the Physicians, that they would refuse them nothing."

> Restrictions upon the Physician, Apothecarie or Chirurgon [sic], either in their common or proper Imployments as contrair distinguished one from another does belong and ought only to be given by His Majesty and his Supream Judicatories . . . and they with the advice of able, learned skillful and disinterested Physicians, shall find . . . most convenient for the ease, health and conveniency of His Majesties good Subjects and so ought not to be presumed upon, to be determined and described by Acts of Particular Burghs and their Councils. . . .[71]

The Court had, therefore, called for the advice of the physicians during the course of the debates. Stevenson, Hay, Balfour and Burnett were asked to submit a report of their opinion.[72] The physicians took up the subject, according to Robert Sibbald, at one of their fortnightly meetings in late 1680,[73] calling together other physicians in the town to discuss the matter. Ostensibly they were asked for their opinion regarding the surgeons' monopoly over phlebotomy, but they also gave their opinion on the amalgamation. "It was unanimously agreed to by all of them," ran an account of the report,

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[71] "Decreet of Separation" op. cit. 1682.

[72] The report has not survived, but there are numerous contemporary references to it. See "Decreet of Separation" op. cit. 1682, Robert Sibbald "Memoirs of My Lyfe" op. cit. 1932, Fountainhall The Decisions of the Lords of Council & Session . . . op. cit. 1759, July 1681 and "Act of the Colledge of Physicians at their Meeting of the Colledge," Edin. Dec. 19 1684.

[73] See Robert Sibbald "Memoirs of My Lyfe" op. cit. 1932, p. 78, and "Act of the Colledge of Physicians . . ." ibid. 1684.

> that Report should be made to the Lords, that each of these Imployments is sufficient to take up a whole man; And that it is not possible for any one Man to exercise both without neglecting sometimes the one, sometimes the other. . . . And Lastly, that there is no such Conjunction in any Civilized and well governed place Abroad, neither had been in this until the time of the late Rebellion and Usurpation. . . .[74]

Both the physicians and the Court of Session came in for a great deal of criticism as a result of the Court's ruling. Sir John Lauder protested ratification of the Decreet in parliament in 1685 on the grounds that "it is well known that the decreet itself was not the deed of the Lords but proceeded from the advice and opinion of some Physicians who had interested themselves extremely in subverting the Surgeon-Apothecaries' just rights and privileges. . . ."[75] The Incorporation, too, claimed the Decreet was the work of the physicians,[76] but it was equally critical of the Lords: legal procedures had been tampered with, it claimed, "by some to lessen the Magistracy of Edinburgh."[77]

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[74]"Act of the Colledge . . ." op. cit. 1684.

[75]C.H. Cresswell Mss. copy of History of the Royal College of Surgeons Edin. 1918, p. 124. This is a typewritten version of Cresswell's book and contains many references to hostilities between the physicians and surgeons, such as the above, which were not included in the published version.

[76]"Answers for the Chirurgeon-apothecaries to Bill of Suspension given in by Thomas Weir and Alexander Teilzer" 1698.

[77]Archives - R.C.S.E. Bundle 91. Information for the Chirurgeons and Chirurgeon-Apothecaries of Edinburgh, And the Magistrates of the sd. Burgh for their special interest. Against the Apothecaries there. n.d.

The surgeons questioned the Court of Session's power to legislate on the constitution of the incorporations. Throughout the debates, and in pamphlets later, the fundamental defence of the surgeons was the authority of the acts granted by the king and burgh, and by law as resting on custom and local practice. The Lords, they allowed, had the right to reduce or limit privileges "granted by inferiour Magistrates, when they are contrary to Law and inconsistent with reason"; but it was not enough for the Lords to justify such decisions, they argued, by reference to the custom of other nations or upon the opinion of physicians.[78]

Worse was to follow for the surgeons. The decision to separate the two occupations was brought down on February 14 1682. At that point the apothecaries and the now-established College of Physicians immediately petitioned the Court to put the Decreet into effect, which it did by ordering that while present surgeon-apothecaries could continue in their dual employment, henceforth they were to "sit at separate tables" and in future could only take apprentices for freedom in one of the trades.[79] This latter instruction was of crucial importance to the incorporations, because it meant in effect that the Lords had not only

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[78] Ibid.

[79] Fountainhall Decisions . . . op. cit. 1759, Feb. 14 1682; "Decreet of Separation" 1682.

abolished one fraternity but had also created another, the fraternity of apothecaries. All the crafts were immediately up in arms. The surgeons, with the backing of all fourteen Deacons, submitted a petition pleading "that the Apothecaries were not comprehended under any one of them and the Interloquitor was against the fundamental constitution of the Burgh,"[80] and Sir John Lauder remarked in his diary that "It was complained that the Session made so familiar with the town of Edinburgh's constitutions and seals of causes."[81] The incorporations made sure everyone in the town knew what had happened, making "such a clamour and a noise as if it were a matter of state and government and alerted the town as if their Charters were impugned or invaded,"[82] as indeed they were.

The Court's order, in effect, put the apothecaries under the control of the College of Physicians. Yet the College made no immediate move to exercise its new authority, explaining to the Privy Council in November 1684 that it had not done so because "they could not have the concurrance for that effect which their patent requyreth."[83] The Council

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[80] "Particular Condescence . . ." op. cit. n.d.

[81] Fountainhall Chronological Notes . . . op. cit. 1822, Feb. 14 1682, p. 173. See also Fountainhall's objection to the appointment of visitors because in effect this elevated the fraternity of apothecaries into another corporation. Decisions . . . op. cit. 1759, Mar. 18 1684.

[82] R.H. Cresswell Mss. copy of History of the Royal College . . . 1918, p. 112.

[83] Register of the Privy Council of Scotland [Reg. of P.C.] vol. X, Edin. Nov. 21 1684. See also Phys. Mins. Dec. 2 1684

immediately complied, ordering them to visit "at least twice a yeare" with one or two of "the ablest of the brotherhood of apothecarys," at the same time ordering the magistrates to concur in any order by the physicians to destroy drugs.[84] In addition, to make it quite clear that the College of Physicians was to be in control of the apothecaries, the Lords ordered that henceforth no-one was to be admitted to the fraternity of apothecaries unless tried and approved by the President and Censors of the College of Physicians.[85] Two months later the Privy Council set up a committee of Lords to oversee their ruling,[86] and in the following year parliament ratified both this act of the Privy Council and the Decreet of Separation.[87]

Just four years after its establishment, therefore, the College had one of the restrictive clauses in its patent--the obligation to be accompanied by a surgeon-apothecary when inspecting apothecaries' shops--removed. Another restriction--requiring a magistrate to be present when the College was prosecuting a burgess--was removed by the Court of Session the following year. In 1685 the College prosecuted George Stirling, a prominent surgeon-apothecary

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"Petition from Apothecaries anent the examination of Intrants read."

[84] Ibid.

[85] Ibid.

[86] Reg. of P.C. Edin. Jan. 8 1685.

[87] A.P.S. 1685 VIII p. 519 ab and A.P.S. 1685 VIII p. 531.

who had been Deacon in 1677-1678 and 1679-1680, for "playing the Physician."[88] According to Lauder, the physicians were attempting to establish authority over the practice of surgery too. Stirling, he recorded, claimed he had only given a clyster and bled the patient, but the physicians responded that these were dangerous practices if mistakenly or wrongly applied. "This," wrote Lauder, "so that they would put a necessity on us to call them on all occasions."[89] The College duly fined Stirling, who appealed to the Town-Council, and although it could not deny the physicians the right to prosecute Stirling it could, and did, overrule the fine.[90] The College appealed to the Court of Session and the case, wrote Lauder, became a question of which authority had pre-eminence--the Town-Council or the College of Physicians.[91] The Court of Session found for the physicians, declaring that they could prosecute surgeon-apothecaries without requiring the presence of magistrates or even against the latter's opinion.[92] Having finally forced payment of the fine, however, the College then promptly rescinded it ". . . at the intercession of one of

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[88]Wm. Eccles Historical Account . . . op. cit. 1707, p. 3.

[89]Fountainhall Decisions . . . op. cit. 1759, Mar. 25 & 26 1685.

[90]Wm. Eccles Historical Account . . . op. cit. 1707, pp. 3-4.

[91]Fountainhall Decisions . . . op. cit. 1759, Feb. 2 1686.

[92]Ibid.

the Lords of Session (who was . . . an Honorary Member of the College)[93] and from the innate gentleness of Sir Andrew Balfour's temper."[94]

The College's reluctance to impose its authority was typical. None of the legislative authority it had gained was used aggressively. For example, neither the Incorporation nor the Town-Council complied with the Decreet ruling, or the subsequent acts of the Court of Session and Privy Council. After the Lords had ruled on the separation of the two occupations, each year until 1688 the apothecaries petitioned the Town-Council to appoint one of them as visitor; each year the Town-Council appointed a surgeon-apothecary and an apothecary, and each year the Court of Session over-ruled the Town-Council and dismissed the surgeon-apothecary.[95] In 1686 an exasperated Court of Session ordered that if the Town-Council again defied its order then the apothecaries could appoint one of their own number

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[93]It is not known who this honorary fellow was. Entering Senators of the College of Justice, or Magistrates, as honorary fellows in order to protect themselves against the surgeons had been suggested as a possible solution to the College's problems.

[94]Wm. Eccles Historical Account . . . op. cit. 1707, p. 4.

[95]See the acts of the Lords of Session appended to "Decreet of Separation" 1682. See also Information for Mr. Alexander Hay, H.M.'s Principal Apothecary . . . against the pretended Incorporation of Chirurgeon-Apothecaries. op. cit. n.d. The affair was also outlined in detail in N.L./M1/1b Report on the Examination of Medical Practitioners drawn up by a committee of the Royal College of Physicians Edin. 1833.

without petitioning the Lords.[96] Yet even the apothecaries appeared reluctant to take this step, because for the following two years they still continued to apply first to the Town-Council, prompting the inevitable charade.[97] And in none of these developments did the College of Physicians intervene.

With little effort on its part, therefore, the College gleaned a great deal of extra power from the political setbacks of the Incorporation. Yet the leaders of the College--the Council--appeared to show little inclination to use these powers. There was almost an air of indifference to the political machinations of their rivals. Sibbald, for example, was in London in 1686 when the Incorporation was petitioning the king for a new patent in defiance of the Decreet ruling, but he apparently made no attempt to interfere on the College's behalf.[98] It was no doubt indifference such as this which had incensed some members of the College in the 1680's. They saw the opportunity for the College to take significant political advantage of rivals threatening to undermine their professional relevance--who needed to pay a physician one guinea when a surgeon-apothecary could supply all the manual skills and medication a patient needed in one person? But the Council dragged its feet.

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[96] Ibid.

[97] Ibid.

[98] R.H. Cresswell Mss. copy. op. cit. 1918, p. 125.

This was not the only issue dividing members. Every question coming before the College appeared to be used as an excuse for the fellows to malign one another. They used religious differences, as, for example, when some members tried to introduce a ruling requiring all physicians to take the test "out of pique to some of the members, as Doctors Burnet, Hardy and Stevenson ygr."[99] They used professional competence, as in the affair over the production of the pharmacopoeia. Medical prescriptions were the personal, and often private, property of individual physicians.[100] The College collected these recipes from individual members[101] and "The Preses, Doctors Balfour, Sibbald and Pittcairne [were] to be revisers of the haill."[102] This pharmacopoeia was ready for the printers by 1683[103] but Balfour and Stevenson, amongst others, objected to it, partly because of mistakes and errors in it and partly

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[99] Fountainhall Chronological Notes . . . op. cit. 1822, Sept. 24 1684.

[100] See also S.R.O. GD 18/2130 "Mss. book of medical recipes 1693-1734" belonging to Sir John Clerk of Penicuik, for a collection of such private prescriptions. For example, Dr. Lower's tincture, which "was kept as a Nostrum by Dr. Lower Tho invented by Dr. Mansol anno. 86 and communicated by him to Dr. Dalrymple 3.7.1713 and by him to myself 29.7.1713."

[101] Phys. Mins. Aug. 29 1683.

[102] Ibid.

[103] D.L. Cowen "The Edinburgh Pharmacopoeia" in R.G.W. Anderson and A.D.C. Simpson (eds.) The Early Years of the Edinburgh Medical School Edin. 1976, pp. 25-45.

because, they claimed, it was "barely a Transcript of the London one, ill Copied, and worse Explained."[104] Balfour "and others" proposed a much simpler document than this "Bulkie Book," a single sheet of simples and compounds available locally.[105] In this instance Sibbald and Balfour were not united, because Sibbald complained later that he was largely responsible for this early pharmacopoeia which had not been printed because "a faction obstructed ym."[106]

Hostilities within the College came to a head in the 1690's in a dispute over conflicting theories for the cure of fever.[107] It was a classic illustration of how easily a physician's reputation could be maligned. The dispute had been initiated by Andrew Brown, a landowner and self-taught physician who had no licence from the College but who practiced in Edinburgh and on his estate at Dolphinton, twenty miles south of Edinburgh, quite legally

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[104] Archives - R.C.P.E. Misc. Paper 98. Information for Sir Archibald Stevenson, and the other Physitians who Adhere to him. n.d., p. 5.

[105] Ibid.

[106] Robert Sibbald "Memoirs of My Lyfe" op. cit. 1932, p. 96.

[107] The dispute has been outlined in R. Howie "Sir Archibald Stevenson and the Riot in the College of Physicians" Medical History 11 (1967) pp. 269-84, Wm. Craig History of the Royal College of Physicians . . . op. cit. 1976, p. 408, but the best and most recent account is by Andrew Cunningham "Sydenham versus Newton: the Edinburgh fever dispute of the 1690's between Andrew Brown and Archibald Pitcairne" in W.F. Bynum and V. Nutton (eds.) Theories of Fever . . . op. cit. 1981, pp. 71-98. A list of some of the pamphlets generated by the dispute is given in this article and in Report on the Education . . . op. cit. 1833, p. 96.

on the strength of a degree obtained in Aberdeen in 1685.[108] Brown was promoting a new theory for the cure of fever, a theory he finally presented in a belligerent pamphlet called A Vindicatory Schedule concerning the New Cure of Fevers (1691), attacking both the persons and the practice of members of the College. To modern ears there is little of moment in his new theory. Brown assumed the current mechanistic physiology[109] and accepted prevailing opinion on the cause of fever, which was morbific matter altering the nature and obstructing the proper flow and subsequent evacuation of the fluids. He also articulated current medical wisdom in his preoccupation with the constitution of matter, in particular the size, shape and consistency of the "particles" of which the vessels and fluids were composed.[110] Where Brown parted company with his antagonists was in his exposition of the nature of matter, the shape and movement of the "particles," and his ultimate conclusions led him to differ from his colleagues on the relative benefits of purging, vomiting and sweating in the treatment of fever. Brown favoured purging.

Brown based his conclusions on what he claimed to be his "experiential" approach to medical diagnosis, an approach he claimed to have learned from Sydenham.[111]

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[108] Andrew Cunningham "Sydenham vs. Newton: . . ." op. cit. 1981, p. 73.

[109] Ibid. pp. 79-80.

[110] Ibid. p. 79.

[111] Ibid. pp. 77-78.

Brown's colleagues within the College would have found nothing exceptional in this, but he made himself most offensive by his implied criticism of the personal and professional failings of many of them. Echoing the vague grumblings voiced earlier by some members of the College, Brown declared it was an "error of the vulgar" to assume that experience inevitably led to wisdom; wisdom would only be attained when experience was accompanied by diligence. Physicians, he wrote, should keep extensive records of case histories and exercise more personal responsibility in their work. "The precipitant Judgement of the vulgar and their pre-conceived opinion hinder improvement and is fatal to people tho it be the basis of Reputation," he pontificated. Physicians should be less concerned with gratifying the desires of patients and more concerned with curing them.[112]

There were other issues. As Andrew Cunningham has pointed out, Brown had a strong patriotic whig commitment, and his medical and political theories were interrelated. Brown saw the members of the College as the personification of unenlightened arbitrary government by men harbouring medical theories unsubstantiated by actual experience. "It is only solid and sound practice that must yield a true theory," he wrote.[113] Such opinions led him to champion

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[112] A Vindicatory Schedule . . . op. cit. 1691, p. 41.

[113] Andrew Cunningham "Sydenham vs. Newton . . ." op. cit. 1981, p. 84.

indigenous talents, and we find him not only defending the integrity of nationally-earned degrees[114] but also advocating a plan in 1692 to set up "within the Kingdom a Profession of Medicine, with Hospitals for the Sick, subservient thereto."[115]

Within the College, the attack by Brown was taken up with vigour by Archibald Pitcairne. Pitcairne was a highly intelligent but volatile man who was the first physician in Britain to formulate a "Newtonian" physiology, i.e. the notion that physical phenomena could be explained mathematically without any reference to material causation.[116] In 1692, through the influence of Dalrymple,[117] Pitcairne was appointed professor of medicine at Leiden university, a prestigious appointment which gave him an international reputation and elevated platform from which to broadcast his theories on human physiology.[118] Pitcairne's

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[114] Looking-Glass for the Black Band of Doctors. 2nd Letter written by Philanderer to his Friend in the Country Philomathes. In defence of Dr. Brown. Edin. 1692, p. 41.

[115] Andrew Cunningham "Sydenham vs. Newton . . ." op. cit. 1981, p. 83.

[116] See T.M. Brown "The Mechanical Philosopy . . ." op. cit. 1968, chap.IV "Archibald Pitcairn's "Mathematical Physick".

[117] Sir John Dalrymple of Stair (1648-1707). Second Viscount 1695 and First Earl 1703. Appointed Joint-secretary by William III in 1691.

[118] Leiden university was in a state of transition in the 1690's. Clinical teaching at St. Cecilia's hospital had lapsed with the death of Franciscus Sylvius (1614-1672) and the richly-stocked chemical laboratories and botanical gardens were not developed until Boerhaave's ascendancy there in the early 1700's. Leiden's chief claim to fame

principal message was that to search for the ultimate essence of material substances was futile. Observation of changes in natural phenomena, changes which could be mathematically calculated through accurate measurement of the vessels and hydrostatic formulae of fluid flow, velocity, etc. he believed was the only way to arrive at an exact knowledge of how the body operated, how to predict morbid changes and hence how to prescribe therapy and medication. We must not try to search for "the Knowledge of the absolute Nature, and intimate Essences and Causes of things," he lectured at Leiden, because this led to "Postulata" with "but few Datas."

> Knowledge of things is confined to the Relations they bear to one another, the Laws, and their Properties, of Powers, which enable them to produce Changes in some things, and to become altered by other things. I speak of corporeal things. Now these Powers, and their Laws are discovered by their mutual Action and Reaction upon each other. For Action and its Consequences are those Data that assist us in the Discovery of the Laws of their Powers; but a Physical Cause, and the Nature of things which the Philosophers so much enquire after, is that unknown something in things from whence they will have all its Powers and Properties derived. But that, being impossible to be known without a prior Knowledge of its Powers, and a Discovery of their Laws, and no Effects being produceable but by its Powers, it follows that while they remain unknown,

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in the 1690's lay in the newly erected anatomical theatre, and the study of anatomy was the principal attraction drawing medical students there. Robert Sibbald made a point of noting that he had seen Sylvius dissect 23 bodies when he had been in Leiden in the early 1660's. (See Robert Sibbald "Memoirs of My Lyfe" op. cit. 1932, p. 57).

> there can be no Knowledge of the Nature of the thing; and when they are known, that Knowledge is of no Advantage. And therefore the Business of a Physician is to weigh and consider the Powers of Medicines and Diseases as far as they are discoverable by their Operations, and to reduce them to Laws; and not lay out their Time and Pains in searching after Physical Causes.[119]

Pitcairne returned to Edinburgh in the summer of 1693 to marry, and did not return to Leiden because of the influence of his wife, the daughter of Archibald Stevenson. He thus reverted to a very small stage compared to the one he had left at Leiden, and he was soon attacking Brown, whose conclusions on the treatment of fever he found totally unacceptable, based as they were on unproven hypotheses about the shape and configuration of the "particles" of matter.[120] To refute Brown, Pitcairne used his iatro-hydraulic theories in a discourse circulated to friends,[121] and in an oration to the Edinburgh College of Physicians in November 1694,[122] to demonstrate that sweating was the most appropriate treatment in cases of fever.

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[119] "An Oration Proving the Profession of PHYSIC free from the Tyranny of any Sect of Philosophers" in The Works of Dr. A.P. Wherein are Discovered The True Foundation and Principles of the Art of Physic London 1715.

[120] Andrew Cunningham "Sydenham vs. Newton . . ." op. cit. 1981, pp. 91-93.

[121] De curatione febrium, quae per evacuationes instituitor.

[122] Archibald Pitcairne's Dissertation on the Cure of Fevers by Evacuations. Read before the Colledge of Physicians of Edinburgh Nov. 1 1694.

Hostile as it must have been to Brown, Pitcairne's attack on him did not produce any measure of support from the College, as subsequent events demonstrated. Another pamphlet appeared in 1695, entitled Apollo Mathematicus; or the Art of Curing Disease by the Mathematicks. Acc. to the Principles of Dr. Pitcairne, attacking Pitcairne for reducing the human body to the status of a machine divorced from its environment. "Medicine is of quite another Nature than Astronomy," the author wrote, "For after they had made their Observations and compared them they found that different places required frequently different Methods; and that one thing was expedient at Rome, another in Egypt, and a third in France. And not only so, but that the Age, Constitution, Manner of Life, Sympathies, Antipathies, etc. was to be taken notice of."[123] Pitcairne's mathematical formulae would give no insight into the mysteries of human motion,

> But though he could make our Bodies as transparent as Crystal of the Rock, so that we could see with the naked Eye, all the order and harmony of the Microcosm, as well as we do the Motions of a Clock . . . Physick would still be a Conjectural Art, and Physicians still Guessers, and Men dye after the old fashion, and Mathematicians be mistaken, and Fools speak Nonsense. If indeed the Professor would teach us how to take down the Machine and set it up again, to take out a crack't Spring, and put in one that is sound and whole, and when the Pendule runs too fast to add some weight to the Ballance, and make the Vibrations more regular and equal and slow; then there would be some hopes of

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[123] Apollo Mathematicus . . . op. cit. 1695, pp. 46-47.

> seeing some Mens Clocks go better, and strike more regularly; Yet after all, I must confess, there would still be some Wretches that all the World would never make go right.[124]

The pamphlet was written by Edward Eizatt, who was admitted into the College in 1695. His entry came in the midst of intense controversy amongst the members, in which all the smouldering political and professional discontents finally caught fire.

The immediate causes of the dispute occurred in 1694, when, for reasons which are not clear but which probably reflect Pitcairne's heightened influence with Stevenson, eight new fellows were admitted to the College.[125] Some of the entries were undoubtedly politically motivated, as for example when Thomas Dalrymple, an apothecary and fourth son of the Earl of Stair, was admitted without examination "for good and weighty reasons."[126] In December of that year Stevenson decided to stand down.[127] As successor, Stevenson supported the candidacy of Robert Trotter and "procured him to be chosen President."[128] In spite of intimations (origin unknown) that Trotter's appointment would be "displeasing to authority,"[129] Stevenson insisted on

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[124] Ibid.

[125] See Appendix II "Active Membership of the College of Physicians of Edinburgh, December 1696." By "active" I mean members who, however infrequently, attended meetings up to and past that date.

[126] Phys. Mins. July 13 1694.

[127] Information for Archibald Stevenson . . . op. cit. n.d.

[128] Ibid.

[129] Ibid.

Trotter's appointment; Trotter was the next eligible fellow in seniority (Burnett declined to stand and Sibbald was not mentioned) and Stevenson was "unwilling that Doctor Trotter should meet with anything which might be constructed an Affront, or Disappointment. . . ."[130]

Unfortunately for Stevenson, Trotter felt no reciprocal loyalty, betraying the old man's trust by immediately setting about to overturn the established order of things within the College. He allowed a new patent secured by the Incorporation of Surgeons in the summer of 1695[131] to be ratified in parliament without opposition from the physicians. In May 1695 the physicians had given orders for the appointment of a committee "to chuse Lawyers Deburse [sic] money and use all means expedient to stop the said Ratificatione. . . ."[132] Two months later, on July 5, the College ordered the distribution of petitions to M.P.s to stop the Incorporation's patent being ratified, which "the College finds prejudiciall to and ane incroachment upon ther priviledges. . . ."[133] Just four days later, however, another minute appeared completely contradicting the previous orders, instructing Dr. Dickson to meet with the surgeons and "fully conclude all differences betwixt

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[130] Ibid.

[131] See chap. III.

[132] Phys. Mins. May 17 1695.

[133] Phys. Mins. July 5 1695.

the Colledge and them concerning the Chirurgeons' ratification. . . ."[134] The result of Dickson's negotiations was a testimonial by Trotter as President agreeing not to oppose the ratification. (It passed parliament on July 17.)[135] The resolution did not have the support of the entire fellowship, because it was never referred to again by the physicians.[136]

Trotter also presided over the admittance of six more fellows, many of whose professional opinions ran directly contrary to those of Pitcairne.[137] One was Edward Eizatt, the author of Apollo Mathematicus, and three others --Rule, Freer and Dundas--were admitted by using Eizatt's pamphlet as the basis of their examination.[138] One can imagine Pitcairne's fury at this insult to his reputation. The whole College exploded in the autumn of 1695 and split into two factions, Trotter remaining President and successfully

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[134] Phys. Mins. July 9 1695.

[135] The testimonial read "I, undersubscribed, doe declare in name of the Colledge, That quhairas we have now rid marches with the Chirurgeons in Edinburgh, we will not any maner of way oppose the reuniting of Chirurgerie and Pharmacy. And seeing Dr. Dicksone was impowered by us to settle with the Chirurgeons, I by this doe homologate what he hath done in this business, in name foresaid. At Edinburgh this 22nd day of July 1695, Robert Trotter."

[136] See also Archives - R.C.S.E. Bundle 91 Heads of Protest 1724 by the physicians in which it is intimated that the decision had not been taken unanimously.

[137] See Appendix II.

[138] Archives - R.C.P.E. Misc. Papers 100.

suspending Stevenson, Pitcairne and five others from the College for over five years. In the ensuing pamphlet and litigious warfare the issues Trotter and company objected to were revealed.[139] The College had hindered the publication of the pharmacopoeia; neglected to visit apothecary shops; failed to prosecute illegal practitioners; brought in novices of its own and denied entry to "men of breeding"; admitted men without examination, and others without paying full dues; and failed to keep Minutes and accounts of the College up to date.

None of these grievances appears to have been resolved, and for all it achieved the controversy was a tempest in a teapot. Nevertheless, the affair ushered in changes in the composition of the College. Because of the need to gain supporters each side had admitted a relatively substantial number of new fellows, and acceptance of this expanded membership was never questioned. By the early 1700's there were thirty-four active members of the College (although many of them only attended the annual general meeting for the election of officers). In 1704 the suspended members were reinstated, although antagonisms obviously remained. Certainly Stevenson and Pitcairne never again played any significant role in the College,[140] and one

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[139] Trotter's allegations are set out in Information for Archibald Stevenson . . . op. cit. n.d. We don't have Trotter's pamphlet.

[140] Pitcairne became a master of the Incorporation of Surgeons in 1701.

physician, considering entering the College, wrote in 1702 that "The number of physicians are so multiplied here and their divisions so great that I have but little encouragement to stay among them. . . . I am truly weary of this country, there is so much jangling amongst the physicians which renders the employment the more contemptible."[141] He did, however, enter the College two years later.

As the older, predominantly aristocratic generation of physicians gradually disappeared from the scene a new generation of physicians was admitted, many of whom were very young, very inexperienced and with less substantial social connections. Not all of them fell into this category: Alexander Dundas was of the family of Dundas of Arniston and became physician to the king; Adam Freer had been put in charge of the Invalids in Scotland in 1691 and in 1699 was appointed Physician-General to the Army; Gilbert Rule was the son of the presbyterian Principal of Edinburgh university; Francis Pringle came from an eminent Fife family, and John Clerk was nephew of Sir John Clerk of Penicuik.

At least as many, however, did not have such substantial social or professional backgrounds. Riddell and Forrest were both the sons of ministers; Cochrane and Drummond were from gentry families without much apparent influence or wealth. Moreover, the College was beginning

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[141] Charles Preston to Hans Sloane, quoted in Harold R. Fletcher and Wm. H. Brown The Royal Botanical Garden of Edinburgh 1670-1970 Edin. 1970.

to admit fellows whose educational and professional backgrounds did not conform quite so rigidly to the classic seventeenth century model of the cosmopolitan, academic scholar and physician. Trotter himself had been apprenticed to a surgeon-apothecary; Dickson had been surgeon to the Life Guards in 1698; Charles Preston was a botanist who became teacher to the surgeons' apprentices in the early 1700's. Finally, George Stirling and John Clerk were both the sons of surgeon-apothecaries. We know nothing of the early training of George Stirling; John Clerk had had little formal education in schools "but was constantly among diseases and medicines."[142] He began his career as an apothecary, and was taken up by Pitcairne who became his private tutor. Pitcairne would not allow the boy to go abroad to study, but eventually Clerk did take the usual European tour before returning to take his M.D. at St. Andrews in 1711.

That Clerk should have chosen to take his M.D. at St. Andrew's rather than at a European university, and that the College should have accepted him as a fellow with such a qualification, was indicative of the shift occurring in the internal composition of the College. In 1702 John Hay applied for, and was granted, a licence without examination on the strength of his M.D. from Aberdeen. The College had to grant him the licence but they did not have to make him

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[142] W. Cullen "Account of Dr. John Clerk" . . . op. cit. 1859.

a fellow. They did, however. Between that date and 1715 eight more licences were issued to candidates with Scottish qualifications, and seven of them were immediately made fellows.[143]

While the general membership was undergoing extension and liberalization, the power structure within the College remained unaltered,[144] and the College continued to be controlled by a small oligarchy of Council members. During the ten-year period 1695-1704 cumulative Council membership was nineteen fellows, of whom five served for one year only and three more for two years. Eleven men, therefore, controlled the affairs of the College in the decade spanning the dawn of the new century.[145] This Council followed substantially the same policies as its predecessors. For example, in spite of the importance of independent apothecaries to the physicians, the Council continued to be unwilling to protect and encourage the growth of the fraternity of apothecaries. Eleven apothecaries had fought the Incorporation in 1682, but by 1696 only three apothecaries

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[143] See Appendix III "Active Membership of the College of Physicians of Edinburgh, Dec. 1715. "Active" has been assessed as before. See note 125.

[144] In Feb. 1696 an act was passed limiting the President's term of office to two years, but this was rescinded in Nov. 1710.

[145] They were Matthew Sinclair (9 years), Alexander Dundas (9 years), Thomas Trotter (8 years), Edward Eizatt (7 years), David Mitchell (6 years), Sir Robert Sibbald (4 years), Sir Thomas Burnet (4 years), David Dickson (3 years), Adam Freer (3 years), James Forrest (3 years), and Alexander Cranstoun (3 years.)

had been formally examined by the College,[146] although according to the Incorporation there were twenty-three "unfree apothecaries," i.e. men practicing without examination by fraternity of apothecaries and surgeon-apothecaries, by 1698.[147] In 1699 the College did make some effort to exercise its authority, drafting an agreement between it and seven apothecaries "to assert and maintaine the decreet of separation pronounced by the Lords of Council and Session in the year 1682."[148] Nothing came of the initiative, however, and in 1705 members of the College asked the President and Censors to begin visiting apothecaries' shops, which they claimed had not been done.[149] The President and Censors dragged their feet for a year before refusing, "being unwilling," they explained, "to enter in a Scuffle with the Town-Council."[150] In 1707 the President of the College estimated the number of apothecaries in Edinburgh at sixty,[151] of which number only half-a-dozen, he claimed, had been examined by the College.[152] On several occasions

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[146] Wm. Eccles Historical Account . . . op. cit. 1707, p. 25.

[147] "Summons of Reduction Dunlope and others . . ." op. cit. 1698.

[148] Phys. Mins. June 19 1699.

[149] Phys. Mins. Aug. 30 1705.

[150] Phys. Mins. Feb. 25 1706.

[151] Wm. Eccles Historical Account . . . op. cit. 1707, pp. 5-6.

[152] Ibid.

the apothecaries petitioned the Town-Council to authorize the College to examine intrants,[153] but the College continued unwilling to take the necessary initiative.

There was no unwillingness by the Council, however, to continue pressing for a role in the examination of candidates for a medical degree. In 1705 the College was communicating with the universities,[154] proposing that it would admit only graduates of Scottish universities if in return the universities would agree not to grant degrees to those likely to be practicing within the jurisdiction of the College unless they had been recommended by the College. It was quite clear that what the College had in mind was the same understanding between it and the universities as that existing between the College of Physicians in London and the universities of Oxford and Cambridge.[155]

Only Edinburgh responded, as far as we know, and even there the reception was circumspect, Principal Carstares agreeing to co-operate, providing the candidate applied in the first instance to the university, and carefully adding "until Medicine be taught in the Colledge of Edinburgh."[156] However, the university did not make

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[153] See S.R.O./1 Currie Dal./E/1/9 "Petition for the Apothecaries of Edinburgh 1707" Archives - R.C.S.E. Bundle 95 "Petition to the Rt. Hon. Lord Provost by the Apothecaries of Edinburgh and others who desire to be admitted to that Fraternity." 1720.

[154] Wm. Craig History of the Royal College . . . op. cit. 1976, pp. 387-88.

[155] Ibid. p. 389.

[156] Ibid. p. 388.

examination by the College mandatory on medical degree candidates. Between 1705 and 1726 twenty-one degrees in medicine were issued by the university, and only eleven of these candidates were required to be examined by the College of Physicians.[157]

By the turn of the century, therefore, the College of Physicians had not yet clearly defined its place. Its membership was greatly enlarged, and it was clearly established as the institutional mouthpiece of the physicians, but it had little to say. It was kept at arms length by the Towns College, who clearly intended to remain final arbiters of the medical degree, and it remained unwilling to challenge the political power of the Incorporation of Surgeons.

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[157] See Appendix IV "Medical Degrees Issued by University of Edinburgh 1705-1726."

CHAPTER III

THE FRATERNITY OF APOTHECARIES AND SURGEON-APOTHECARIES

> God seems to have put a distinguishing Honour upon Trades-Men, that in all Ages Men of the greatest Learning, and the Noblest Heroes, have sprung from their Loins. . . . nothing is more glorious . . . when notwithstanding of the Defect of Education, a Man knows how to rectify and elevate the Inclinations, which an obscure Birth naturally inclines to be servile.[1]

In spite of the political set-backs experienced by the Incorporation of Surgeons in the 1680's it was in a much stronger position than the College of Physicians. It had custom, tradition and a deeply entrenched political base in the city. Its political values reflected those of the burgh, resting upon a strong sense of communal identity and oligarchic self-government. It had successfully created for its members a secure political environment within which they could pursue their professional aspirations to the full. These aspirations were directed towards the development of medical practice along the lines of a craft incorporation. As such it had three functions. It protected the interests of its members. This meant not only obstructing the establishment of a College of Physicians, but also pursuing

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[1] Alexander Pennecuik An Historical Account . . . op. cit. 1722.

barbers and apothecaries who could not, or would not, join the Incorporation. It was equally vigilant in preserving equality of opportunity for those within its own ranks. It served to maintain standards of practice. These reflected the wider experience and common sense empiricism of the artisan; its principles of value were largely economic and utilitarian. When members had to defend themselves, as they did in the 1680's, they spoke of their legal rights and social utility, not their learning and rank. They spoke of the long years of experience devoted to the acquisition of experience and knowledge in the preparation of drugs, for example, "whereas a phisitian will be graduate upon a years studie and that which they chiefly studie is not so much the knowledge of drugs as the general theorie of physick."[2] Finally, it developed the training of apprentices. A craft incorporation was designed to equip a man with specific skills and knowledge, learned through experience under the direction of a master craftsman and judged by specific standards of performance in open examination by his peers. It is the tradition portrayed in Die Meistersinger and it is this tradition to which the Incorporation of Surgeons belonged. It pursued the maintenance of these ideals aggressively and with a great deal of success.

With its success, however, came the beginning of the breakdown of its communal solidarity. It produced

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[2]Archives - R.C.S.E. "Petition to My Lord High Chancellor and Lords of H.M. Most Hon. Privie Council" 1684.

too many young surgeon-apothecaries; it became impossible to accommodate them all under the political organization of the Incorporation.

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The surgeons were dismayed by the assistance given by the Duke of York to the physicians, but they were not disheartened. They knew he had not anticipated his actions would jeopardize their interests. He was sufficiently interested in their affairs to attend some of the debates in the Court of Session during the Decreet hearings, but had left Edinburgh early in 1681 before the final ruling was brought down.[3] Not, however, before he had given his name to a petition presented by the surgeons to the Privy Council designed to safeguard themselves against the new College by "ratification and confirmation of all ther former priviledges. . . ."[4] The petition was thrown out by the Lords, "that it boor unusuall clauses, such as the discharging the Lords of Session, or other Judges, to medle with any of their priviledges. . . ."[5]

James was not deliberately trying to encourage discord in Edinburgh; he believed that, as in other cities,

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[3]Fountainhall Chronological Notes . . . op. cit. 1822, Jan. 21 1682 and Jan. 24 1684.

[4]Ibid. Jan. 12 1682; Reg. of P.C. Jan. 12 1682.

[5]Fountainhall Chronological Notes . . . op. cit. 1822; Reg. of P.C. Jan. 19 1682.

there was room for the two institutions. Melfort made this clear in 1686 when the Incorporation, after unsuccessfully appealing the ratification of the physicians' charter and the Decreet decision in parliament,[6] again turned to the king, this time asking for a new patent.[7] The request was granted, but there was some danger the Court of Session would again interfere. To prevent this Melfort wrote to the Lord High Chancellor, pointing out that the physicians' patent had been "by all understood to be without prejudice of the privileges of the Surgeon-Apothecaries, the erection of the said College being designed to look forward, and not to call in question these old rights and privileges that usefull Incorporation hath so long time enjoyed; his Majesty is concerned to see that both grants may be determined and the rights of both parties preserved for the several ends and uses as they were appointed. . . ."[8]

The revolution of 1688 made the surgeons' new patent a dead letter,[9] but they obtained another from William and

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[6]See in Archives - R.C.S.E. Bundle 125 petition "To My Lord High Chancellor and Lords of H.M. Most Honourable Privie Councell The humble petition of the Chirurgeon-apothecaries of Edinburgh" 1684; petition "Unto his Grace the Duke of Queensberry His Majties. High Commissioner and the Honrbl. Lords and [-] of the Articles." 1685; petition "To the Right Honoble. The Generall Convention of Burrows" 1685.

[7]R.H. Cresswell mss. copy of History of the Royal College . . . op. cit. 1918, pp. 124-26.

[8]Archives - R.C.S.E. Bundle 125, Melfort to Lord High Chancellor, May 23 1687.

[9]This 1686 patent is discussed in Report on the Medical Education . . . op. cit. 1833. The patent was submitted

Mary almost immediately.[10] This patent confirmed the surgeons in all their existing rights, and gave them "in all time coming, full and free Priviledge, and Liberty to Exerce [sic] both the saids imployments of Chirurgie and Pharmacie, and to instruct their Prentices therein, And to try examin and admit, such as they shall find Qualified to be Masters of both, and to appoint Visitors of the Apothecaries Drugs, to Judge whether they be Wholesome or Corrupt. . . ." The patent also considerably increased the surgeons' area of jurisdiction; they were given authority over practitioners in the Lothians, Fife, Peebles, Selkirk, Roxburgh and Berwick.

Letters of publication were duly received from the Privy Council on June 23 1696 and posted at the Mercat Cross in Edinburgh by a no doubt jubilant Incorporation. Its success was confirmed when on the following day the Town-Council reiterated its act of 1657 "erecting the Chirurgeon-Apothecaries and Apothecaries into one Fraternity."[11] Moreover, this time the distinction between surgeon and surgeon-apothecary was removed completely; "And in respect there are but very few of these of the Old Fraternity now living, they doe therefore adjoyne to them all, those of the

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to parliament in 1693 but was thrown out because it was issued under the dispensatory powers of the king.

[10]Written to the Great Seal Aug. 25 1694; appended Aug. 29 1694; ratified in Scottish parliament July 17 1695. A copy may be found in Archives - R.C.S.E.

[11]"Act of the Town-Council of Edinburgh in favours of the

Incorporation of Chyrurgeons who were freemen of the Incorporation before the 29th day of August 1694 years; and ordaines them in all tyme comeing to make up one Society with those who shall hereafter (being examined, and found qualified) be admitted by the Council, conforme to the foresaid act of erection."[12] Another act of the Town-Council in December 1696 restated the terms on which an apothecary could now practice in Edinburgh, i.e. after examination by the Incorporation and authorization by the Town-Council.[13]

After 1696, therefore, the title "Incorporation of Surgeons" was a misnomer. Technically the two institutions kept separate identities; the fraternity applied to the Incorporation for permission to use its hall for their meetings, and a register for the new brotherhood was drawn up by the surgeons' treasurer.[14] They conducted separate examinations, and the Town-Council remained the final arbiter of admission to the fraternity. In reality, however, membership between the two was indistinguishable, and the Incorporation now formally declared all apprentices must take instruction in botany. The earlier instruction in

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Chyrurgeon-Apothecaries and Apothecaries" printed in A Collection of Royal Grants . . . op. cit. 1818.

[12] Ibid.

[13] "Act of the Town-Council" dated Dec. 9 1696, printed in A Collection of Royal Grants . . . op. cit. 1818.

[14] Surgs. Mins. July 17 1696. This register has not been found.

botany and pharmacy (see page 22) was not mandatory, but in 1695 the Incorporation accepted a petition from James Sutherland, the Intendent at the garden in Trinity Hospital (see page 40), who now petitioned the Incorporation claiming he had extensive facilities for teaching botany.[15] The Incorporation passed an act ordering all apprentices and servants to pay Sutherland one guinea when taking out their indentures, in return for which Sutherland was "to own and acknowledge all the Masters of the said Incorporation ab qib patrons and to attend to them in the said garden and to demonstrate the plants . . ."[16] By 1705 a member of the Incorporation claimed teaching apprentices was "a considerable part of his [Sutherland's] imployment."[17] In that year Sutherland retired[18] and the Incorporation immediately appointed Charles Preston to replace him.[19] When Preston died in 1711 its patronage was transferred to his brother George.[20] Such instruction was not an instrusive part of the apprentice's training--he was required to attend the garden at 4 a.m. and be back in his master's shop by 7 a.m.

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[15] Surgs. Mins. June 1695.

[16] Ibid.

[17] Town-Council Mins. 1701-1718, Aug. 29 1705.

[18] Town-Council Mins. 1701-1718, p. 121.

[19] Surgs. Mins. Nov. 8 1705.

[20] Surgs. Mins. Dec. 31 1711.

--but it was a significant demonstration of the Incorporation's commitment to the complete amalgamation of surgery and pharmacy.

The incorporation which after 1696 called itself "Masters and Brethren of the Incorporation of the Chirurgeon-Apothecaries of Edinburgh"[21] was, therefore, an association of trades covering the practice of barbers, barber-surgeons, "simple surgeons" and surgeon-apothecaries. It was not only the most powerful medical institution in Edinburgh; it was by now a wealthy corporate body. Upsett fees and quarterly dues were providing it with ample funds. The barbers' contribution was particularly significant; in 1700 it was claimed the Incorporation had raised 25,000 merks in recent years from barbers' upsett fees.[22] Furthermore, the Incorporation could command instant credit both from its own members and from other sources within the craft community. One Peter, or Pieter, Castele (alias La Perle), a tailor in the Canongate appeared to be a constant source of funds, making loans totalling 5000 merks, for example, between August 1697 and May 1698, and a further Ł3500 scots in November 1698.[23] Between 1688 and 1695 the

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[21]Surgs. Mins. June 1 1697.

[22]N.L. 1.1.110 Representation For the Apothecaries of Edinburgh against the Act presented by the Chirurgeons; declaring that the Profession & Practice of Chirurgery & Pharmacy maybe joyned in the same person. Dec. 21 1700.

[23]Surgs. Mins. Aug. 3 1697, Feb. 17 1698, May 19 1698 and Nov. 10 1698.

Incorporation was spending an average of £2500 scots p.a.[24] £600 st. was invested in the Darien scheme, and in 1697 the surgeons built a large new hall complete with anatomy theatre, which must have been one of the largest buildings in Edinburgh at that time.

Through the burgh acts it had secured the Incorporation controlled the practice of surgeons absolutely. Surgeons had much to gain from entry into this communal monopoly, and only rarely do we come across a burgess surgeon who was not a member of the Incorporation. Barbers had progressively less incentive to join, and in the early eighteenth century we find the Incorporation pursuing them, or their widows (who traditionally had inherited the freedom), confiscating equipment and having offenders thrown into gaol for failing to pay dues or being suspected of practicing phlebotomy.[25]

With the creation of the surgeon-apothecary, however, the Incorporation had created a new kind of medical practitioner, but it continued to try to impose the static, conservative values of the craft incorporation onto men with an obvious inclination towards innovation and improvement. The result was the beginning of the breakup of the Incorporation's communal solidarity. The Decreet of Separation had been the first successful challenge to the surgeons' local

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[24] Surgs. Mins. Nov. 7 1695 and Jan. 24 1696.

[25] Archives - R.C.S.E. Bundle 98 "Suspension . . . Gibson and others against Elliot and others" July 1701; "Act Anent Widows and Unfree [-]" 1701.

authority, and it had come not from their rivals the physicians but from a member of the fraternity of apothecaries and surgeon-apothecaries. Conflicting pressures were most conspicuous in the education of apprentices. The Incorporation wished to continue to monopolize the apprenticeship business, yet the very success of the amalgamation of the two employments made such restrictive practices increasingly less desirable.

Even before the 1696 patent and the Town-Council act making all the surgeons surgeon-apothecaries, it is clear that surgeon-apothecaries were predominant in both the Incorporation and the fraternity. One of Patrick Cunningham's complaints to the Court of Session had been that surgeon-apothecaries would not admit any to the fraternity who were not equally proficient in both occupations.[26] James Muirhead can perhaps be taken as typical. He had been petitioning the Incorporation for entry at the same time that he took the examination of the fraternity.[27] Having fulfilled his apprenticeship to a surgeon-apothecary he claimed the right to be examined by the Incorporation. He had already set up and furnished a shop, he said, and was already practicing in co-partnership with his master,

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[26] Archives - R.C.S.E. Bundle 91 "Information for the Apothecaries of Edinburgh against the Chirurgeon-Apothecaries." n.d.

[27] "Information for James Muirhead" op. cit. 1681.

Thomas Kincaid, "and is provided with chirurgical instruments."[28] He was duly examined and entered the Incorporation in 1682.

Surgeon-apothecaries constituted more than half the total membership of the Incorporation in 1692,[29] and of course after 1696 all the surgeons were surgeon-apothecaries. They all kept shops. The sale of medicine and drugs probably constituted the most lucrative branch of medical practice, and at that time was also the most dependable, because a bill for drugs was something for which a patient could be pursued in court. James Brown, a surgeon-apothecary, for example, pursued Janet and John Chieslie and their father for a bill of £190.13.8d scots which they had spent on drugs, plasters, purges, clysters, julips and powders in the two years 1699-1701.[30] Some men were beginning to concentrate more on trade; Robert Clerk, another surgeon-apothecary, had bills from "druggists" (two of whom were apothecaries and one a surgeon-apothecary) of approximately £650 scots over a twenty-three year period 1688-1711.[31] Surgeon-apothecaries, however, had no monopoly. The pages of the Caledonian Mercury in the early eighteenth century

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[28] Ibid.

[29] Summons of Reduction Dunlope & others . . . op. cit. 1698.

[30] S.R.O. GD 5/347 "Itemized Account of drugs etc. supplied to John Chieslie and sister Janet since June 1699." May 1701.

[31] S.R.O. GD 18/5261/1-44/4 Letters: Robert Clerk to Sir John Clerk of Penicuik.

are liberally sprinkled with advertisements by apothecaries and private individuals claiming to have the secret ingredients of remedies for everything from coughs and colds to "decay".[32]

The majority of surgeon-apothecaries were not merely traders, however. A walk along the corridors of the present College of Surgeons in Edinburgh, where the portraits of most of the members of the Incorporation at the turn of the eighteenth century are hung, provides eloquent visual testimony to men with a clear sense of their own worth. As a historian of the surgeons wrote in the 1860's, "I have good reason to believe that both in wealth, and rank, and enterprise, they held as high, perhaps even a higher, place among the men of their times, than the medical men of the present day among the men of the present generation."[33]

This opinion is more or less born out by looking at the membership of the Incorporation in the period 1698-1705.[34] Members of the Incorporation were drawn to a large extent from what can broadly be called the gentry, that is they came from families with a territorial designation,

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[32]See for example Caledonian Mercury Feb. 13, Mar. 21, June 17, July 10 1721; Nov. 26 1724.

[33]John Gairdner Historical Sketch . . . op. cit. 1860, p. 14. See also Bower II p. 169.

[34]See Appendix V "Masters of the Incorporation of Surgeons 1698-1705.

from the legal profession and from the ministry. That this list constitutes a fairly representative sample is confirmed by looking at a breakdown of the membership over a longer period.[35] Between 1696-1730, the two-thirds which can be identified were all drawn from gentry, professional and merchant classes. They had social connections with the gentry community at large and with each other. Robert Eliot's father, the minister of West Linton, was a close personal friend of Sir John Clerk of Penicuik, the brother of Robert Clerk, who in turn was son-in-law of Hugh Brown. Sir John was also a close personal friend of Dr. Alexander Penicuik of Newhall, who was in turn brother-in-law of Thomas Edgar. The Penicuik's appear to have had a traditional attachment not only to the Incorporation but to the craft community generally. Dr. Penicuik's father was Alexander Penicuik, a distinguished member of the Incorporation; the author of An Historical Account of the Blue Blanket was reported to be Dr. Penicuik's nephew.[36]

As might be expected, there was a fair degree of transference from apothecary to surgeon-apothecary. The fathers of John Hay, Hugh Brown and John Jossy had all been apothecaries, and after the turn of the century apothecaries steadily increased the membership of the Incorporation. It

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[35] See Appendix VI "Masters of the Incorporation of Surgeons 1696-1730."

[36] See W. Brown The Writings of Alexander Penicuik, M.D. and Alexander Pennicuik Merchant Edin. 1906.

did everything it could to encourage this, manipulating its own regulations when necessary. To boost membership in the 1670's apothecaries had been admitted without the formality of examination in anatomy and surgery;[37] James Pringle and John Knox (and possibly George Borthwick), who had all been burgess apothecaries, were admitted in 1703 without examination. This time the justification was not political but economic; both Pringle and Knox paid £1000 scots upsett.

Surgeon-apothecaries, therefore, were not ingenuous artisans. Nor were they uneducated. The regulations of the fraternity of surgeon-apothecaries were different than those of the Incorporation with regard to academic requirements.We have no documents which tell us precisely what these requirements were, but in the Decreet debates, for example, it was pointed out by the surgeon-apothecaries that all apprentices were required to know Latin and Greek before being booked.[38] Moreover, although the regulations of the Incorporation called for an apprenticeship of five years, the surgeon-apothecaries claimed in the same debates that apprentices were not expected to spend the whole of their eight years studying at home. They were required to devote "ther five years to the trade and thereafter be

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[37]See Act of 1696, Surgs. Mins. Oct. 2 1696.

[38]"Decreet of Separation" op. cit. 1682.

three years in their Studie and Travelling before they can be tryed to be Master."[39]

By the end of the century, therefore, master surgeon-apothecaries were likely to be generally well-educated men. This was certainly the opinion held by their supporters. "Without all Controversie," wrote the Lord Provost in 1707, it was known that the surgeon-apothecaries "are generally the best bred by their Service at Home and Industry and Travels Abroad, for the knowledge of the Nature and Cure of all Diseases, of any sort of People in the Kingdom."[40] Practical experience continued to have equal value, however. There was no stipulation that the three years had to be used for academic study. Thomas Edgar, Alexander Monteith, Henry Hamilton and John Jossie all recorded in their petitions for entry that they had been abroad, and as we can see from Appendix V, at least some of the members had used this time to travel to Leiden. At least one intrant,

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[39] Ibid. It is difficult to determine the basis of this discrepancy between the regulations and the practice. The demand for an eight-year apprenticeship does not appear in the Incorporation's constitution until 1725, and it is easy to assume that the eight-year term was a regulation imposed only upon intrants to the fraternity of apothecaries and surgeon-apothecaries. Yet James Muirhead, when petitioning the Incorporation for examination in 1681 assumed the eight-year regulation. He had been apprenticed in 1672, he said, and therefore claimed he should have been eligible for entry in 1680.

[40] Archives - R.C.S.E. "Petition to Parliament by The Lord Provost, Baillies and Town-Council of Edinburgh for themselves, and their Community, and all the Leidges that may be concerned." n.d.

however--James Turnbull--had used his time to serve as surgeon on board a ship.[41] This apparently was equally acceptable, because he entered the Incorporation in 1676. Surgeon-apothecaries could qualify for entry, therefore, by extending either their practical or academic qualifications.

Members of the Incorporation in fact made little distinction between academic and practical training. Some, as we have seen, had studied at university and had medical degrees. The Incorporation's most eminent M.D. was undoubtedly Archibald Pitcairne, who entered in 1701, yet neither Pitcairne nor any other member of the Incorporation was afforded a special status by virtue of his medical degree.

There is little evidence that any of them particularly coveted the title. James Borthwick and Thomas Kincaid, the two principal negotiators behind the 1657 amalgamation, were both men of learning but had no medical degree; Kincaid left a library of almost 200 medical books to the Incorporation in 1709.[42] Alexander Penicuik was another member of the Incorporation who had no medical degree but was nevertheless a distinguished medical practitioner in late seventeenth century Scotland. His son, however, was educated

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[41] S.R.O. Extracted Decreets CS 29/Mar. 24 1682 "Answers for the Apothecaries" 1682.

[42] Surgs. Mins. Feb. 2 1709.

to become a physician, taking the familiar European tour and taking his degree abroad. This was a pattern followed by other surgeon-apothecaries. As we have already seen, the sons of George Stirling and Robert Clerk both became physicians, and of course John Monro, who entered the Incorporation in 1703, educated his son Alexander to this same end.

In their role as teachers, the surgeon-apothecaries were in a position to influence future generations of medical practitioners. The number of such apprentices had increased considerably following the amalgamation, for "No Man would bind his son to be Chirurgeon or Apothecary only," it was complained by critics, "when he could bind him to both trades; the fees being equal to both."[43] Yet to realize this increase in the number of apprentices, surgeon-apothecaries had contravened the restrictive practices which as members of a craft incorporation they should have been committed to protect. Each master protected his own interests through control over the number of apprentices admitted; it kept the calling limited and prevented one master engrossing all the apprentices. Yet while masters were limited to booking one apprentice every three years, there was nothing to prevent them taking any number of

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[43] "Information for the Apothecaries . . ." op. cit. n.d. See also Archives - R.C.S.E. Bundle 91 "Information for Mr. Alexander Hay, His Majestie's Principal Apothecarie, and others"; n.d. and "Representation for the Apothecaries of Edinburgh against the pretended Chirurgeon-Apothecaries." n.d.

"servants," which they increasingly did, who served for two or three years (subject to the same booking examination), some then being converted to apprentices as vacancies arose.

From the beginning of the eighteenth century, twenty to twenty-five indentures for apprentices and servants were recorded in the Minute Books of the Incorporation each year, and assuming a five-year apprenticeship, this would mean roughly 100-125 apprentices and servants working in Edinburgh at any one time. Such a volume was obviously far greater than Edinburgh could absorb. Much of the surplus was taken up by the military, where the surgeons claimed their apprentices had a considerable reputation. They had brought their trade "to that perfection," they told the Lords of the Articles in 1685, "that those bred with them are preferred to any other of their trade in any armie or navie abroad and that his Majesties Ships and navies have been to their great satisfaction served by them."[44] The Incorporation did its best to provide support for these men. In 1679 it began to issue "certificates" of competence to apprentices who were considered qualified and were "going abroad."[45] A few had glamorous careers and did not need the Incorporation's patronage. Take, for example, the career of Robert Erskine, the sixth son of Sir Charles Erskine,

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[44] "Unto His Grace . . ." op. cit. 1685.

[45] Surgs. Mins. Sept. 1679.

first baronet of Alva, who matriculated at Edinburgh university in 1691 and 1693 while at the same time being apprenticed to Hugh Paterson, surgeon-apothecary, from 1692-1697.[46] Erskine travelled to Paris and Holland, took an M.D. at Utrecht in 1700, and returned to London to become a F.R.S. in 1703. He subsequently had a brilliant career in Russia as physician and advisor to Peter the Great.

Erskine's passage between the university and the surgeon-apothecary was not unique. Alexander Brown, son of the laird of Thorndykes, was booked apprentice to Francis Borthwick in 1696, but it was specifically noted that he "is not in service, but is a schollar at the Colledge of Edinburgh."[47] From the late seventeenth century the surgeon-apothecaries were admitting to their shops students who were not necessarily apprentices, but who presumably wished for the opportunity of exposure to the practical experience the surgeons offered. The contracts of James Sutherland and the brothers Preston gave them permission from the Incorporation to teach botany to "all apprentices, and servants and all others that have the liberties and privileges of their chops. . . ." [sic][48] There is no way of calculating

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[46]See Paul Letters & Documents relating to Robert Erskine S.H.S. pub. 1904.

[47]Surgs. Mins. Nov. 18 1696.

[48]Surgs. Mins. June 19 1695, Nov. 8 1705 and Dec. 31 1711.

the number of such "schollars" because they were never formally recorded, but by the early 1740's the Incorporation noted that over two-thirds of its "students of medicine" were not apprentices.[49]

In all the voluminous petitioning of the 1680's one of the major points made by the surgeons had been the educational function they performed and the benefits brought to their apprentices by the amalgamation.[50] After 1657, they claimed, the diversified training they offered gave apprentices far wider choice and opportunity, particularly in the military "where both is required" and abroad "which hath already, and does daily, improve both Imployments, for the Honour and Interest of the Nation."[51] At home too, it

> is so acceptable to all persons and agreeable to all interests, tending not only to the case of the Leidges to have the means and remedies of their health without distraction but also to the great Improvement of knowledge and the Advantageous education of all Gentlemen who may intend either Chirurgery, pharmacy or medicine. . . .[52]

The surgeons never missed an opportunity of pointing out the benefits the amalgamation had brought, reminding the Convention of Royal Burghs in 1685 how useful they were to

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[49] Surgs. Mins. June 27, 1742.

[50] For example, the preamble to the Act of Parliament of 1670 ran ". . . they being as Nurseries in these Airts. . . ." See also preambles to patents of 1686 and 1695.

[51] "Information for the Chirurgeons and Chirurgeon-Apothecaries of Edinburgh against the Apothecaries of the said Burgh." n.d.

[52] "Petition for the Chirurgeon-Apothecaries against the Simple Apothecaries and the College of Phisitians." July 4 1699.

children of all persons "particularly your own, who may have genius and inclination to be . . . bred up in both."[53] In the same vein they told the Lord Chancellor and the Privy Council how the conjunction of the occupations had been the means "to incourage young men to goe abroad to paris and elsewher to perfect themselves in their trade to the greatest hight that can be and to be able to be a patrimony to the sones of very worthie and honest parents."[54]

Even amongst apprentices formally indentured, one can see from a breakdown of the social composition of apprentices for the period 1696-1730[55] a heavy representation of the gentry, ministry, legal and merchant classes. In other words, it would appear that the Incorporations claims had some justification; they were able to offer respectable careers for the sons of the professional and gentry classes.

All the public pronouncements of the Incorporation with regard to its own utility as a vehicle for the economic promotion of the youth of the Scottish gentry fits well into Professor Smout's analysis of the influence of the Reformation on the development of Scottish society.[56] By the end of the seventeenth century sectarianism was not at issue amongst

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[53] "To the Right Honoble. The Generall Convention of Burrows" op. cit. 1685.

[54] "To My Lord High Chancellor . . ." op. cit. 1684.

[55] See Appendix VII "Apprentices of the Incorporation of Surgeons 1696-1730."

[56] T.C. Smout A History of the Scottish People . . . op. cit. 1972, pp. 90-93.

members. One, Gideon Eliot, had been surgeon to the Cameronians in 1689-1692, and had returned to Edinburgh to be elected Deacon in 1693-1694 and again in 1699-1700. On the other hand, Hugh Brown was a declared Roman Catholic (he and his son were prosecuted for attending mass in 1695), and a number came from Jacobite families although, of course, this did not necessarily imply Roman Catholic sympathies. The strident tones of religious earnestness, however, could still be heard in the "Act anent Immoralities" passed by the Incorporation in 1703, echoing a similar act passed by the Town-Council, in which the Incorporation placed responsibility for all the disasters the citizens of Edinburgh had experienced in recent years--the famine, the Darien debacle, the fire of 1701 and the collapse of the pier at Leith--on the sinful living of the inhabitants.

This act could have been purely a nominal gesture to the kirk. The constitution drawn up in April 1696 was not, however, and here a similar, albeit more muted, voice calling for more rational and temperate personal conduct by both masters and apprentices, together with a general call for educational improvement, can be heard. Because "feasting and drinking" was "tending to the dishonour of the Incorporation" the upsett for intrants was increased to Ł200 scots, out of which banquet money of only 10/6d was to be spent.[57] Henceforth, it was ordered, there was to be no

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[57]Surgs. Mins. Apr. 9 1696.

drinking while the intrant was being examined, and even after the examination a limit of one pint of wine was put on all participants. Out of the money thus saved 30/- st. was to be assigned for the purchase of books. A library was established, and in October 1699, after numerous donations had been received--books on history, surgery and physiology as well as animal and mineral curiosities--rules governing the "Library of the Chirurgeon-Apothecaries of Edinburgh" were drawn up and an advertisement placed in the Edinburgh Gazette called for donations.[58] By the time Kincaid's donation was received in 1709 the library boasted a librarian and a library committee to oversee operations.[59]

The competence of apprentices and servants was also brought under review. Certificates, it was claimed, had in the past been issued "improperly" and a new regulation was introduced whereby they could now only be issued in the presence of the whole membership.[60] Examination procedures for intrants were also brought under review. We know little about the examination in botany and pharmacy beyond the fact that Alexander Monteith established a chemical laboratory in the Surgeons' new Hall in 1697, where for a few years he conducted classes in chemistry, distilled brandy and used

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[58]Surgs. Mins. Oct. 16 1699.

[59]Surgs. Mins. Oct. 19 1699 Laws of "The Library of the Chirurgeon-Apothecaries of Edinburgh." Library regulations were renewed May 27 1707, Dec. 13 1720 and Mar. 1 1722.

[60]Surgs. Mins. May 14 1696.

the laboratory for "the tryals of intrant apothecaries."[61] We know more about the examination by the Incorporation. Until 1696 we do not know either what form the examination took or how conscientiously it was performed, because it was not entered in the minute books. Now, however, the precise rules were set down.[62] Five examiners were to be chosen annually, two retiring each year. On the first day one of the examiners was required "to make discourse of his own upon some part of chirurgery or anatomy" and the intrant was required to submit a written thesis concerning "his own opinion of the foundations or institutions of chirurgerie and, anatomy and shall be obliged to defend the same."[63] None of these theses seems to have survived, although they did exist, because the pretensions of the Incorporation in demanding written theses--in English--occasioned derisive comments from the President of the College of Physicians in 1707.[64] Four more days were assigned equally to the examination of intrants on questions of anatomy and chirurgery, each time by a different examiner.[65]

Because they outlined these procedures does not mean they were carried out. By 1712, however, we can with more

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[61] Surgs. Mins. Sept. 15 1698.

[62] Ibid.

[63] Ibid.

[64] Wm. Eccles Historical Account . . . op. cit. 1707, p. 11.

[65] Surgs. Mins. Sept. 15 1698.

confidence assume they were. In the first place, examination procedures were again recorded,[66] and it was declared that if anyone refused to take his turn as examiner "if he be in the Exercise of his imployment and keep a publick shop" then he was to be barred from voting "in matters of the Incorporation."[67] This was a serious sanction, since the franchise was valuable property to the members. In the second place, beginning in 1709 the examination of candidates for entry was written into the minutes, with the different examiners and questions discussed itemized.

These examinations were co-operative affairs, the whole membership voting on the competence of the candidate. As a corporate body the Incorporation was opposed in principle to the appointment of a single authority, as it was opposed to any action which placed one of its number in a privileged position. When Alexander Monteith, their Deacon, came to an arrangement with the Town-Council for a supply of dead bodies from the Correction House in return for attending the sick poor gratis, the Incorporation was quick to follow with a petition to the Town-Council for a similar concession. There was no objection to Monteith's initiative in principle, "They only disrelished his getting the Counsil's gift exclusively to himself."[68] The Town-Council demanded in return that the Incorporation begin to

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[66] Surgs. Mins. Feb. 6 1712.

[67] Ibid.

[68] Quoted in Robert Peel Ritchie Early Days . . . op. cit. 1899.

hold public anatomy demonstrations, and it had no hesitation in committing members to the erection of a new Hall with a dissecting theatre. An act was passed on December 17 1697 appointing a committee to consider the question and to nominate an "operator."[69] It was not until 1703, however, that members jointly undertook a week-long public anatomical demonstration and dissection of the human body.[70] The exercise was repeated the following year.[71]

The long delay between the appointment of the committee and the first public dissection was in all likelihood the result of reluctance on the part of many of the surgeons to concede what were jealously guarded rights. Teaching apprentices was an important part of their work; the engrossment of teaching by one, or a few, of them placed such masters in a privileged position. Yet the number of apprentices, and the special facilities needed to teach anatomy and botany, made individual instruction increasingly impractical. In spite of the Town-Council's gift, dead bodies were still a scarce commodity, and every master could not keep a well-stocked garden. Botany had always been the preserve of one man. The study of anatomy could similarly only be conducted in a group situation.

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[69] Surgs. Mins. Dec. 17 1697.

[70] Surgs. Mins. Jan. 8 1703 "Act for inserting in the Books the several days operations and demonstrations of the several parts of the body."

[71] Surgs. Mins. May 18 1704.

In 1705 Robert Eliot, a surgeon-apothecary, petitioned the Incorporation for permission to teach anatomy because "a person in this city," he claimed, was planning to apply to the Incorporation with an offer to teach apprentices and servants gratis in return for a share of the dead bodies the Incorporation were allowed. Eliot was appointed professor of anatomy, because, as he said, he was sure the Incorporation would prefer to give one of its own number "the benefit of the said bodies spoke of and their Theatre for what is publick and the encouragement he may reasonably expect from their apprentices and servants in what he does in a privat Colledge. . . ."[72] In 1708 Adam Drummond, another surgeon-apothecary, was also appointed professor of anatomy and these two men jointly taught anatomy. (In 1716 Eliot died and John McGill took his place.)

These city appointments had nothing to do with the university. They were made by the Town-Council, and it is perhaps a measure of the continuing close relationship between the Town-Council and the Incorporation of Surgeons that it is the only craft institution honoured in this way. Each time the Incorporation gave its patronage to a teacher the Town-Council converted it to a professorship.[73]

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[72] Surgs. Mins. Feb. 1 1705. The other applicant has not been identified.

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	Appt. by Incorporation	Appt. by Town-Council
James Sutherland	June 1695	1696
Charles Preston	Nov. 8 1705	May 8 1706
George Preston	Dec. 31 1711	Jan. 4 1712
Robert Eliot	Feb. 1 1705	Aug. 29 1705
Adam Drummond	Not known	July 28 1708
John McGill	Not known	Oct. 24 1716

Continued support by the Edinburgh Town-Council could no longer, however, guarantee results in the national parliament. In 1670 the Scottish parliament had ratified all the burgh acts passed in the Incorporation's favour.[74] In 1700 and 1707 the Incorporation again approached parliament.[75] We know nothing of the first bill, but the second was intended to confirm its existing rights and privileges

> and Declares That hereafter there shall be no restraint upon the Leidges of being served by them in medicines without calling Physicians, when the Imployers refuse to call any . . . Prohibiting and Discharging any prosecution of the saids Chyrurgion-Apothecaries on the forsaid account Without prejudice to their being lyable for unskillfull practice . . .[76]

Neither of these bills were passed by parliament. The bill of 1707 reached a second reading on March 17, 1707,[77] but ultimately failed, disappearing amid the final dissolution of the Scottish parliament. A more appropriate theatre for the rejection of this most Scottish of institutions could not have been devised. The Scottish parliament may have dismissed this second overture of the surgeon's in any event, but when the national parliament itself disappeared, as we shall see, the Incorporation of Surgeons had no hope of continuing to maintain the position in Edinburgh it had achieved.

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[74] See pp. 16-17.

[75] A.P.S. 1700 x 231b; A.P.S. 1707 xi 431b & App. 101a.

[76] Ibid.

[77] A.P.S. 1707 xi 445b.

CHAPTER IV

THE MEDICAL FACULTY AND THE ROYAL INFIRMARY

> . . . the Schools of Medicine are now on such a Footing in Edinburgh that no Student need go Abroad to be education, unless for the Opportunity of Hospitals, to learn the Practice in.[1]

The above observation was written a year before the medical faculty of the university was formally established in September 1726, and four years before the Royal Infirmary admitted its first patient in August 1729. It was written by a surgeon-apothecary, yet positions on the medical faculty were to be filled only by fellows of the Royal College of Physicians, and the Infirmary was to be popularly known as the "physicians' hospital," a reflection of the dominant position the College held in its administration. Corporately, the Incorporation of Surgeons had no voice in either of these institutions. These facts illustrate the anomalies in the events of the 1720's in Edinburgh, in addition to presenting a manifestly different picture of medical organization to the one outlined in previous chapters. But then, many things had changed in Edinburgh. The Union

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[1] A Letter from a Gentleman in the Country to his Friend in Edinburgh. Proposals for Employing the Remaining Stock of the Fishery so as to be of Universal Use and Advantage to the Nation. Edin. 1725, p. 9.

Settlement of 1707 made changes in the political balance of power in the burgh, leaving the incorporations no longer able to act quite so effectively as a brake on independent action by the magistrates. Agreements struck between the Town-Council, the College of Physicians and the Towns College (or university, as it was increasingly coming to be known) between 1720 and 1726 were a reflection of these new political realities; the magistracy made decisions completely contrary to the interests of the incorporations in general and the Incorporation of Surgeons in particular.

Changes in Edinburgh in the first decades of the eighteenth century were not only a question of political realignments. No-one could deny that the Union disturbed the Scottish people profoundly.[2] At best it was seen as an inevitable necessity; at worst a deeply humiliating experience. This was particularly true in Edinburgh. The Union forced the citizenry to search for a re-statement of the City's identity in the light of the loss of its parliament and the attendant social caché. The re-statement took the form of plans for the renovation and renewal of the city, at costs which a strong lobby of burghers and craftsmen found excessive. The establishment of a faculty

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[2]See James McKinnon The Union of England and Scotland Lond. 1896; W. Ferguson "The Making of the Treaty of Union of 1707" Scottish Historical Review (43) 1964; T.C. Smout "The Anglo-Scottish Union of 1707: I The Economic Background" Economic Historical Review 2nd ser. XVI (1963-64) pp. 455-67; R.H. Campbell "The Anglo-Scottish Union of 1707: II The Economic Consequences" Economic Historical Review 2nd ser. XVI (1963-64) pp. 468-77.

of medicine and an infirmary accorded well with this spirit of revanche, particularly since they were promoted in terms of the need to develop the human resources of the country. For example, the initial public appeal for the infirmary was argued only secondarily in terms of its function as a teaching aid for medical students; primarily it was seen as a means of improving the human stock of the country in the most economical manner possible.

Behind these institutional statements of damaged pride, however, the wheels of older cultural imperatives continued to turn. The medical voices being raised in favour of the development of medical teaching, and articulating the economic and didactic benefits an infirmary would provide, belonged almost exclusively to surgeon-apothecaries. Men, however, were no longer prepared to put loyalty to the collective solidarity of their craft institutions before their own personal advancement. They rejected the corporate solidarity of the crafts, but did not abandon its utilitarian philosophy, its commitment to teaching and insistence upon equality of opportunity amongst peers. The promotors of the new institutions came to terms with these older values and in doing so created institutions of high prestigious appeal functioning on solid utilitarian values.

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The Union settlement was particularly damaging for the crafts of Edinburgh. The Convention of Royal Burghs

no longer exerted the strong burgh lobby it had enjoyed in the Scottish parliament, and craft representation from Edinburgh to the parliament of Great Britain was effectively abolished when representation was reduced to one member. Although the crafts argued that in order to preserve the spirit of James VI's Decreet the choice of M.P. should henceforth alternate between candidates from the merchants and craftsmen; the magistrates insisted on a straight competition within the Town-Council and their candidate inevitably prevailed.[3]

The crafts were thus in a weaker position to check a Town-Council which after the rebellion of 1715 began to promote plans not at all popular with many of the burghers. Its leading spirit was George Drummond, whose involvement in and commitment to the Union settlement found practical expression in a desire to create a new Edinburgh out of the ruins of the old. "It was a glittering vision and he would devote the rest of his long life to it."[4]

Soon after 1715 Drummond occupied increasingly important positions on the Town-Council, culminating in his

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[3]See "Act of the 14 Deacons of Edinburgh for defending the privileges of having a representative to the ensuing Parliament" 1710; Surgs. Mins. Oct. 17 1710; Surgs. Mins. Nov. 16 1710 and Surgs. Mins. Nov. 2 1710.

[4]W.H. Makey "George Drummond's New Edinburgh" Edinburgh's Infirmary Edin. 1979 pp. 19-22; W. Baird "George Drummond: An Eighteenth Century Lord Provost" Book of the Old Edinburgh Club IV 1911 pp. 1-55; T.C. Smout "Provost Drummond" University of Edinburgh: Extra Mural Publications Edin. 1979. Drummond's desire to restore "the gilt of the city absolutely" has been outlined in J.B. Morrell [full citation note 27].

election as Lord Provost in 1725 and 1726. During this period the principal achievement of the Town-Council was passage through the British parliament of acts authorizing civic improvements in Edinburgh and surrounding areas, such as the expansion of the harbour at Leith, the renewal of city walls and highways leading into the city, the laying of water pipes in some areas of the city, and the establishment of a fund "towards employing and maintaining the Poor of Edinburgh."[5] The cost was to be underwritten by a tax on ale originally introduced in the 1690's to pay off the city debt, and the magistrates were empowered to borrow up to £25,000 st. in order to purchase the land necessary for these projects.[6]

Many burghers, with the Incorporation of Surgeons in conspicuous presence, objected to these plans, and their objections found voice in the civic elections of 1721.[7] They were suspicious of the activities of the magistrates, and in particular Robert Wightman and James Nimmo, merchants,

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[5]See A. Chalmers Historical Account of the City of Edinburgh's Duty on Ale and of the Management thereof . . . Edin. 1754, pp. 7-20.

[6]N.L./2.196 Act of Parliament granting to the good Town of Edinburgh Two Pennies Scot on the Pint of Ale and Beer. Edin. June 13, 1693; N.L./2.196 Act for Continuing Duty of 2d scots on Ale and Beer . . . read in Parliament beginning Mar. 17, 1714; Edinburgh Beer Duties 1722 9 Geo. I c 14.

[7]In the pamphlets Memorial For Several of the Merchants, Burgesses and of the Corporations of the Crafts of the good Town of Edinburgh; Against the pretended Magistrates of the said City. Nov. 15 1721; Preamble to Bill of Suspension Nov. 10 1721; Answers for The Magistrates and Town-Council of the City of Edinburgh to The Bill of Suspension . . . Nov. 8 1721; A Vindication of the Conduct of the Magistrates . . . Nov. 29 1721.

and George Drummond, then a commissioner of customs, who

> have formed a Design of inhancing the Magistracy into their own Hands that they have actually managed Matters so, as to be successively Town-treasurers these Five or Six years past. . . .[8]

Wightman, Nimmo and Drummond were also amongst the co-partners of a fisheries enterprise, and the burghers were suspicions that public money was being diverted into it. It was not that the protestors were suddenly becoming over-zealous in the matter of private peculation and the uses and abuses of political power. "Were the Question only," they pointed out, "who should bear the Name or use the Ensigns of Magistracy, or if the Citizens found themselves governed by Men who would assume no more Power than in Justice does belong to the Magistrates of a free Burgh, the Corporations and Burgesses now complaining might for the Sake of Quiet have overlooked many Irregularities. . . ."[9] But these men, it was feared, were eroding traditional burghal practices. The protestors questioned the constitutional right of some of them to take office; George Drummond was not a merchant and should therefore not have been eligible for office. The most serious concern, however, was that the extra patronage generated by these public works projects was being used to co-opt craftsmen into supporting the magistrates at election time. The magistrates, they argued, were promoting

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[8] Preamble to Bill of Suspension . . . ibid. 1721.

[9] Memorial for Several of the Merchants . . . op. cit. 1721.

> . . . useless public works . . . and a vast Load of Debt . . . to no other Purpose but to make private Advantage from the Materials of which these works are made, and to engage the Persons employed therein, in their Interest, in a View to facilitate their Projects in Election matters.[10]

John Campbell, a tailor, was one whose vote secured the election of the magistrates in 1721.[11] Two others were the surgeon-apothecaries George Cunninghame and John McGill.[12] The elections stood, but criticism did not end. Four years later, in 1725, when George Drummond was elected Lord Provost, we find the same hostility being expressed by burghers to

> . . . a Magistracy, deeply rooted by long Ten years Possession of her Government, and strengthened by their many Largesses to the poor and covetious [sic] and grown formidable to the peaceable Citizens by their Acts of Power, and strong Assistance, both here and elsewhere. . . .[13]

Whatever the realities behind these innuendos, the fact remained that the Town-Council now had relatively large sums of money and patronage at its disposal. Against this we see a decline in the corporate[14] wealth of the Incorporation of Surgeons. Since 1710 it found itself in increasing financial difficulties. By 1721 the members "consider[ed]

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[10] Preamble to Bill of Suspension . . . op. cit. 1721.

[11] Ibid.

[12] Surgs. Mins. Oct. 17 1721.

[13] A Second Advice to a Citizen of Edinburgh Edin. 1725.

[14] Individually, members were prospering. See Caledonian Mercury Aug. 31 1725 report of robbery of the home of an

it their duty to husband the Callings money with the outmost [sic] frugality."[15] Its financial difficulties were exacerbated in 1723 when the barbers won legal separation from the Incorporation.[16] In 1728, with its "affairs in such a Situation as required the most frugal Oeconomy,"[17] the surgeons contemplated renting out the two pavilions adjoining their Hall, and between 1734 and 1736 they sold the bagnio and advertised their Hall for voluntary roup.[18] Not until the 1760's did they recover full possession of their property.

Consciousness of its financial problems was no doubt one factor contributing to the Incorporation's now evident conflict with the Town-Council, and we can also see it manoevering on other political fronts which were also to arouse the opposition of the magistrates. From 1717 the Incorporation began again to raise the issue of engrossing completely the teaching and licensing of apothecaries; i.e. it wanted to remove the clause in the Town-Council act of 1657 which gave the Town-Council final

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"eminent surgeon." The thief demanded the wife's jewels and money, but fled when the footman intervened.

[15]Surgs. Mins. Apr. 19 1721.

[16]R.H. Cresswell The Royal College of Surgeons . . . op. cit. Edin. 1918, chapter VIII "The Separation of the Barbers and Surgeons" pp. 124-39.

[17]Surgs. Mins. Feb. 22 1728.

[18]Surgs. Mins. Jan. 16 1734; Surgs. Mins. Feb. 19 1736.

approval of intrant apothecaries.[19] In April 1721, partly to relieve its financial problems, the Incorporation admitted thirteen apothecaries, without examination, upon payment of 900 merks (£45 st.) each.[20] With its membership now at 59, and with the knowledge, according to William Graeme, that they were "the Persons who practise the most of [medicine] in this Place,"[21] the Incorporation tabled the constitution covering examinations in anatomy and surgery, and six months later the surgeon-apothecaries drew up a set of regulations which covered examination in botany, pharmacy and the materia medica.[22] Armed with these regulations, they proposed to "endeavour to come to agreement with the physicians to obtain a Town-Council Act to the effect that none be allowed to set up shop but as Chirurgeon-Apothecaries as now laid out."[23] Coming to no agreement with the physicians, early in 1724 they petitioned the Town-Council alone.[24]

We know all this from the surgeons' Minute Books, yet there is no mention of the petition in the Minute Books of the Town-Council, nor was any such act ever ratified by it. Why was it silent? It was not an unimportant matter, as we can see from the reaction of the College of Physicians.

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[19]Surgs. Mins. Aug. 9 1717; Surgs. Mins. Nov. 19 1717.

[20]Surgs. Mins. Apr. 19 1721.

[21]Essay for Reforming . . . op. cit. Edin. 1727.

[22]Surgs. Mins. Mar. 1 1723; Surgs. Mins. Aug. 7 1723.

[23]Surgs. Mins. Aug. 7 1723.

[24]Surgs. Mins. Feb. 12 1724.

We know that it was aware of the Incorporation's intentions, because in response to a request from the Incorporation the officials of the College appointed a committee to discuss the matter with the surgeons in June 1723.[25] We also know that the College was highly incensed by the proposed revisions.[26]

As we have seen, the College had little enough to say in the education of medical students. A faculty of medicine was clearly being contemplated both by Principal Carstares[27] and his successor William Wishart, a step in this direction having been taken when in 1713 Carstares had recommended the appointment of a fellow of the College, James Crawford, to the position of professor of medicine in the university.[28] Two things are clear from this appointment. Crawford's primary responsibility was to the university, not the College. He examined candidates with the assistance of two other fellows from the College, but only by invitation from Carstares, and the three men only examined those candidates the university wished to examine. Moreover,

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[25] Surgs. Mins. May 23 1723; Phys. Mins. June 4 1723.

[26] See Archives - R.C.S.E. Bundle 95 "Memorial for the Chirurgeon-Apothecarys of Edinburgh" 1723; Archives - R.C.S.E. Bundle 91 Answers for the Chirurgeon Apothecaries of Edinburgh to Representation of the President, and other Members of the Royal College of Physicians Mar. 18 1724.

[27] For Carstares' ambitions for the university of Edinburgh see J.B. Morrell "The Edinburgh Town Council and its University, 1717-1766" in R.G.W. Anderson and A.D.C. Simpson (eds.) The Early Years . . . op. cit. 1976.

[28] Ibid. See also Phys. Mins. Dec. 26 1710 and Phys. Mins. Nov. 4 1718.

examining candidates was Crawford's only responsibility. He taught chemistry sporadically, but in 1719 was appointed professor of Hebrew.[29] He taught no medically-related subjects after 1720, but he continued to be the principal examiner of medical degree candidates.[30]

The College, therefore had a tenuous link with the university, and in what appears to have been a move to strengthen it in November 1723 the College (not the university) recommended to the Town-Council, and was granted, the appointment of another of its fellows, William Porterfield, to the position of professor of medicine.[31] This was not a university professorship; Porterfield was not, by his appointment, part of the faculty of medicine.[32] Porterfield's commission focussed upon his intention to teach the theory and practice of medicine, if he received "sufficient encouragement."[33] Apparently he did not, because so far as we know he did not offer classes, although he remained a fellow of the College until he retired in the 1750's. And it was in some measure the Porterfield appointment the College was seeking to protect when it spoke out against the Incorporation's bid to engross

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[29]J.B. Morrell "The Edinburgh Town Council . . ." op. cit. 1976.

[30]See Phys. Mins. May 5 1724.

[31]Phys. Mins. Nov. 21 1723.

[32]See Phys. Mins. May 5 1724.

[33]Phys. Mins. Nov. 21 1723.

the education of apothecaries. In March and September 1724 it registered a strong protest to the Town-Council against the Incorporation.[34] "They have invaded the Privileges of the Physicians in their whole Extent," the physicians complained. "If the Chirurgeon-Apothecaries Claim be granted, the Physicians are, in some Measure, incapable to live in the Place, the whole of Medicine being then in the Chirurgeon-Apothecaries Hands."[35] The College was quite clear about the implications of such a monopoly for medical education in the city; it would be "a Discouragement to all Men of Genius to study Medicine in all Time coming in this City."[36]

In 1724, therefore, we find the College of Physicians with two problems. Firstly, how to come to a final settlement with the university; secondly, what to do about the Incorporation of Surgeons. In the resolution of these issues the College's greatest ally was a surgeon-apothecary of some stature within the Incorporation. John Monro was treasurer from 1707 to 1710, and his accounts displayed a conscientiousness and accuracy for figures not common amongst his colleagues. He was Deacon of Surgeons in

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[34] Answers for the Chirurgeon Apothecaries of Edinburgh . . . Mar. 18 1724; Heads of Protestation . . . against a MONOPOLY intended by the CHIRURGEON-APOTHECARIES to the Prejudice of the PHYSICIANS and BURGERS residing in this Place. Edin. Sept. 7 1724.

[35] Heads of Protestation . . . ibid. Sept. 7 1724.

[36] Ibid.

1712-1713 and served as Deacon-Convenor of the crafts for the same period. John Monro was also wholly committed to the Revolutionary settlement and the Union, by heredity and marriage. He was the son of Alexander Monro of Bearcrofts, a large estate in Rossshire, who had only narrowly escaped torture with Carstares for his involvement in the Rye House plot in the 1680's.[37] John had married Joan Forbes, the daughter of Forbes of Culloden, and was thus uncle of Duncan Forbes (1685-1747) who became Lord Advocate in 1725 and Lord President in 1727. Forbes did much to repress the incipient rebellion in Glasgow in 1725 over the imposition of the Malt Tax. Although we have no surviving letters between John Monro and George Drummond, we know they were close friends.[38] The former had precisely the same ambitions for the development in Edinburgh of a universally prestigious medical teaching centre as George Drummond had for the civic grandeur of Edinburgh, and it is clear that in this community of interest they provided mutual help for each other.

Between 1720 and 1726 John Monro worked indefatigably to promote medical teaching in Edinburgh.[39] In the early

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[37] R.E. Wright-St. Clair Doctors Monro. A Medical Saga op. cit. Lond. 1964, pp. 2-3.

[38] J.B. Morrell "The Edinburgh Town Council . . ." op. cit. 1976, p. 51.

[39] Almost all the information we have concerning the Monros involvement in the establishment of the medical faculty and the infirmary is contained in an account of the life of

1720's we find him initiating a "chemical Elaboratory" to correct "the many abuses and frauds Committed in preparing Chymicall and Galenical Medicines" and also "to bring those sciences to the outmost [sic] perfection In this Place And that our Youth may be Instructed in these Arts so necessary and usefull to Mankind. . . ."[40] We also know of two pamphlets written by Alexander but at his father's direction--one in 1721 and another in 1725--designed to promote the establishment of a hospital.[41]

The whole of John Monro's work in promoting medical education in Edinburgh was intended for the benefit not of himself but his son Alexander, who was quite consciously educated by his father to be a teacher of anatomy. Alexander had been sent to all the leading anatomy schools in London and on the Continent, and his expertise in dissecting was assiduously broadcast by his father amongst the medical

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Alexander Monro, John's son, written in the middle of the eighteenth century. It is reproduced in H.D. Erlam "Alexander Monro, primus" University of Edinburgh Journal (18) 1953-1955, pp. 77-105. It is a strange document, written in the third person but almost certainly auto-biographical, and with a largely didactic intent. Hereafter called Monro Autobiography.

[40] Monro Autobiography p. 84; Archives - R.C.S.E. Bundle 95 "Contract of Copartnery for the Improvement of Medicine" 1721.

[41] We do not have the title of the first; it is mentioned in Monro Autobiography p. 84 and in An Account of the Rise and Establishment of the Infirmary, or Hospital for Sick-Poor, erected at Edinburgh 1730. The other pamphlet is A Letter from a Gentleman in the Country to his Friend in Edinburgh. Proposals for Employing the Remaining Stock of the Fishery so as to be of Universal Use and Advantage to the Nation. Edin. 1725.

community in Edinburgh.[42] On his return in 1720, by means which are not entirely clear but almost certainly involved the active co-operation of George Drummond and the two incumbent professors of anatomy--Adam Drummond and John McGill,[43] John Monro secured his son's appointment to the position of professor of anatomy, and at the same time had the position converted to a university appointment.[44]

In the same year Monro encouraged his son to enter into a teaching partnership with Charles Alston, a physician from the west of Scotland whom Monro had befriended at Leiden.[45] In the fall of 1720 the pair advertised their intention to offer classes in anatomy and surgery at Surgeon's Hall and classes in botany at Holyrood.[46] We do not know how many students Alston attracted, but Monro's initial enrolment was 57 students, all drawn from the large pool of apprentice surgeon-apothecaries.[47]

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[42] Monro Autobiography pp. 81-82.

[43] We know nothing about John McGill beyond the fact that his father was a merchant, and that he was one of the surgeon-apothecaries who was to disassociate himself from the crafts in the burgh elections of the following year. Adam Drummond was one of the Drummonds of Megginch, an old Perthshire family. See C.G. Drummond "Adam Drummond of Megginch, Surgeon-Apothecary (1679-1758)" Medical History (18) 1974 pp. 147-55.

[44] Monro Autobiography p. 82.

[45] Ibid. Charles Alston M.D. Glasgow 1717. Through kinship ties with the Hamilton family, Alston had been appointed professor of botany in the King's Garden at Holyrood--a regius, not a town, appointment--in 1716.

[46] R.E. Wright-St. Clair Doctors Monro . . . op. cit. 1964; Monro Autobiography p. 83.

[47] Edinburgh University Library holds complete records of Monro's student enrolment.

The story of how the Monros, probably again through the assistance and influence of George Drummond, succeeded in having Alexander's appointment as professor of anatomy in the city changed to a life-long university professorship, has already been outlined.[48] In 1722 the Monros petitioned the Town-Council that they intended "making this Place as famous a School of Anatomy as any of these to which our Youth is sent with so great expense for their Education."[49] The Town-Council responded by making Monro's position ad vitam aut culpam, in spite of the fact that it had only recently declared that professors should only be appointed during its pleasure.[50] Three years later Monro was received as a professor in the university[51] and in the same year, ostensibly for reasons of safety from rioters protesting against graverobbing, he removed the material paraphernalia of his teaching within the precincts of the university; ostensibly, because, as Wright-St. Clair has pointed out, he had in fact arranged to move into the university one month

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[48] See espec. J.B. Morrell "The Edinburgh Town Council . . ." op. cit. 1976 and J.R.R. Christie "The Origins and Development of the Scottish Scientific Community 1680-1760" History of Science (12) 1974 pp. 122-41; R.E. Wright-St. Clair Doctors Monro . . . op. cit. 1964, pp. 20-49.

[49] Town-Council Mins. Mar. 14 1722.

[50] Ibid.

[51] Monro Autobiography p. 86. According to this document "Tho' Mr. Monro's Commission appointed him Professor in the University, yet, on Account of serving his Predecessor Mr. Drummond's Interest, he did not ask to be admitted Member of that Society 'till November 1725, when he was introduced there at the same Time with Mr. MacLaurin. . . ."

before the riot.[52] With this move Monro gained undisputable possession of the teaching of anatomy until he retired in 1757 in favour of his son. He taught regularly each year, enrolment gradually increasing to over 300 students, although the percentage of apprentices gradually decreased.

John Monro's plans went beyond engrossment of the teaching of anatomy for his son. From the available evidence it is clear that the foundation for what eventually became the faculty of medicine in the university lay in the chemical laboratory he initiated in 1721. This establishment was intended not only to produce medicines, but also to provide a base and accommodation from which the other medical subjects--the theory and practice of medicine, and chemistry--could be taught.[53] Apparently, the old man initially intended Alexander to teach these subjects as well as anatomy, but to the son's relief, "others offered their service."[54] These were Drs. George Martine (M.D. St. Andrews and Leiden) and William Graeme (M.D. St. Andrews 1724); and Drs. John Rutherford (M.D. Rheins 1719), John Innes (M.D. Padua 1722), Andrew St. Clair (M.D. Angers 1720) and Andrew Plummer (M.D. Leiden 1722).[55] The second group,

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[52] R.E. Wright-St. Clair Doctors Monro . . . op. cit. 1964, p. 37.

[53] Monro Autobiography p. 84.

[54] Ibid.

[55] These two groups of doctors are always referred to collectively, suggesting a legal business association, but no evidence to this effect has been found. The former partnership began teaching in Edinburgh in 1721. From the dates of graduation of two of

Rutherford and Co., were the four physicians jointly appointed professors of medicine in 1726 and constituted the faculty of medicine in the university. As the Autobiography records:

> The Rivalship of the Teachers of Medicine did not continue long, for the Patrons of the University appointed the four last named Gentlemen to be Professors there, and then the other two desisted from Teaching.[56]

We have little additional information about the exact nature of this transformation, but what we do have shows that at some point the College of Physicians was drawn into the negotiations in concert with John Monro. Before outlining the bits of information we have, the point should be made that in spite of the fact that both John and Alexander Monro were members of the Incorporation of Surgeons,[57] only once in the Autobiography is that institution mentioned, although it is clear these negotiations were of direct relevance to the Incorporation's own plans in 1723 to alter its constitution.

Rutherford, Innes, St. Clair and Plummer, presumably (but not definitely) offering classes from John Monro's

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the latter group, they could not have been available collectively until 1723.

[56]Monro Autobiography p. 84.

[57]John Monro was making arrangements in 1721 or 1722 for his son to take a medical degree and resign from the Incorporation, but his son uncharacteristically resisted "by the advice of some Friends, whose Opinion he had great reguard [sic] for, and who thought the Business he then had as Surgeon-Apothecary was more lucrative than was to be expected by him as a Physician so young."

chemical laboratory in 1723, were licensed by the College of Physicians early in 1724.[58] In September 1724 they announced their intention to offer classes in the theory and practice of medicine commencing November 1724, and in chemistry and pharmacy commencing February 1725.[59] In the same month the College of Physicians made the petition already mentioned (see page 158) to the Town-Council protesting the Incorporation's plans to change its constitution, in the course of which the College revealed that it had been "at great Charge in erecting an Elaboratory for the Preparation of Chymical Remedies on the Virtue and Efficacy of which the College of Physicians may depend; by which means not only students of Medicine have Insight, but likewise a great Sum of Money saved to the Nation."[60] The following month the four physicians were all made fellows of the College of Physicians[61] and also successfully petitioned the Town-Council for the use of the College garden, explaining that they had purchased a house for a "chymical Elaboratory" adjoining the garden, and wanted the additional land ". . . for the better carrying on their design of furnishing the Apothecary Shops with chymical medicines and instructing the students of medicine in that

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[58] Plummer and St. Clair were licensed Feb. 25 1724; Rutherford and Innes were licensed Mar. 24 1724.

[59] Caledonian Mercury Sept. 29 1724.

[60] Heads of Protestation . . . op. cit. 1724.

[61] Phys. Mins. Nov. 3 1724.

part of the Science."[62] The College Garden had formerly been let to George Preston and, according to the petitioners, ". . . had for some years lain in disorder. . . ." Preston, of course, was the professor of botany in the physick garden adjoining Trinity Hospital who had been teaching surgeon-apothecaries there since 1712. He had worked hard in the garden at Trinity,[63] perhaps at the expense of the College Garden, but the fact that he was also one of the baillies who had protested the irregularities in the Town-Council elections of 1721 could perhaps also have helped persuade the Town-Council of the virtues of this new offer from Rutherford and Co.

By the end of 1724, therefore, John Monro and the College of Physicians had the chemical "elaboratory," staffed by the four fellows of the College and ready to launch an extensive teaching programme. The precise response of the Incorporation is as difficult to determine as the other events of the period. That the Incorporation recognized the threat can be seen by a proposal recorded in the Surgeons' Minutes for March, 1725 to have a special clause added to the indentures of apprentices, to the effect that

> no apprentice for five years shall for the first three years go to any of the Professors of Medicine, Chymie, Anatomy, Surgery or Materia Medica but with his masters consent he may go to them the last two years.[64]

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[62] Town-Council Mins. Nov. 11 1724.

[63] See Town-Council Mins. Sept. 10 1712 and Sept. 1 1714 outlining the greenhouses Preston had built and the ditching and draining he had undertaken.

[64] Surgs. Mins. Mar. 2 1725.

Apprentices were still obliged "to attend the Physick Garden between 5 and 7 in the morning as formerly and each Master that gives liberty otherwise than as above shall pay to the Treasurer L5 st."[65] The proposal, however, was effectively defeated. Fourteen members (three of them were John Monro, John McGill and George Cunninghame, and five others were apothecaries who had entered in 1721) lodged a protest, arguing that such a regulation would cause unnecessary suffering to apprentices "in indigent circumstances and such as are of very pregnant and promising parts"[66] and the Incorporation was forced to concede that it would waive this regulation if the master testified "that he would be at a Disadvantage by Complying with this order."[67]

After March 1724 competition between the physicians and surgeons for control of the apothecary shops, the lines of demarcation between the practice of the two institutions, and teaching rights and responsibilities (issues which had been pursued so tenaciously and almost continually since 1681) ceased abruptly and were never referred to again in the minutes of either institution. Subsequent practice suggests that the Incorporation was no longer restrained; the Incorporation examined candidates in pharmacy, botany, anatomy and surgery, and in 1727 William Graeme believed

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[65] Ibid.

[66] Ibid.

[67] Ibid.

that the surgeons had sole responsibility for pharmacy.[68] It is clear, however, that they had lost control of the study of anatomy. In February 1725 the Incorporation recorded that no dead bodies were to be taken into their Hall unless by order of the magistrates.[69] A month later the Incorporation ordered that the professor of anatomy was not to lodge dead bodies in its Hall or anatomy theatre without its consent.[70] These bald statements tell us little, but the magistrates' assertion of their authority over the supply of dead bodies, and the surgeons' assertion of their authority over the dissection facilities of the professor of anatomy tend to suggest lines of antagonism with the Incorporation on one side and the Town-Council and Alexander Monro on the other.

A month later, the surgeons found themselves under further attack, this time by their fellow tradesmen. It began when "a great mob of Brewars and other Tradesmen's Servants, with Clubs and Stones" attacked a detachment of the City Guard as they were arresting some other apprentices for attacking and beating men thought to be surgeons.[71] According to Bower, the whole town was "in an uproar." The mob was sufficiently threatening to cause the Magistrates to read the Riot Act. According to the magistrates, the

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[68] An Essay for Reforming . . . op. cit. 1727 p. 11.

[69] Surgs. Mins. Feb. 11 1725.

[70] Surgs. Mins. Mar. 2 1725.

[71] Caledonian Mercury Apr. 20 1725.

rioters were incensed by allegations (there were no eye witnesses) that surgeons' apprentices "and Accomplices" were grave-robbing, accusations which both the Incorporation and Alexander Monro denied publicly, the Incorporation attributing the rumour to "several malicious and evil-disposed Persons."[72] That same night prominent surgeons' houses were pillaged and broken into, and threats were made to burn Surgeons' Hall.[73]

It was this occasion which prompted Alexander Monro to request permission to have his anatomy teaching enterprise moved within the College compound. He had already been accepted as a professor in the university and this material move completed the process. He was also now publicly associated with the four fellows of the College of Physicians, as the following advertisement in the Caledonian Mercury in the summer of 1725 shows.

> A Complete system of Medicine to be taught and continued yearly at Edinburgh begins Wednesday November 3 next as follows:
>
> Usual Colleges on MATERIA MEDICA and Methodus Prescribendi by Dr. Charles Alston P.B.R.
>
> ANATOMY, Humane and Comparative, Chirurgical Operations and Bandages, by Alexander Monro, Pr.A. & FRS On CHYMISTRY being a complete Course,

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[72] Ibid. The Lord Provost conveyed "complaints from inhabitants" that graves were being robbed in 1722, and the Incorporation had ordered that it be written into the indentures of apprentices "that they will have no part in raising the dead." See Surgs. Mins. Jan. 17 1722.

[73] Caledonian Mercury Apr. 19 and Apr. 20 1725.

> according to the method of the celebrated Herman Boerhaave of Leyden, including all the Chymical processes in the New Edinburgh Dispensatory by John Rutherford, Andrew St. Clair, Andrew Plummer and John Innes M.D.D. Colleg. Reg. Med. Edin. S.S. who advertised and gave that College last year, and public lectures on the different Parts of the Institutes and Practice of Physick. On the THEORY of Medicine in which Dr. Boerhaave's Institutes will be explained, after his own Method, by two of the said Gentlemen, viz. Andrew St. Clair and John Rutherford.
>
> On the PRACTICE of Medicine, being the Explication of Dr. Boerhaave's Aphorisms, to be performed in the same manner by Drs. Innes and Plummer.[74]

The Incorporation of Surgeons made a brief attempt to combat this formidable opposition. Martine and Graeme were given permission to use Surgeon's Hall for their lectures following Monro's departure.[75] They taught for approximately 18 months, then Graeme left for London, and Martine returned to private practice in St. Andrews.

Six months later, on February 9 1726, the four proprietors of the chemical laboratory were jointly made professors of medicine in the University of Edinburgh. We know nothing about the negotiations between the university and the Town-Council which led to this joint appointment; it is likely that the appointment was made in a manner not completely regular. University professorships still lay in the gift of the Town-Council, yet there is no record of the appointment in the Town-Council minutes for that date.

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[74] Caledonian Mercury July 20 1725.

[75] Essay for Reforming . . . op. cit. 1727; Surgs. Mins. Oct. 18 1726.

The appointments were recorded twenty years later, in 1747, when George Drummond returned to the magistracy after an absence of twenty years. It was inserted immediately before the appointment of another professor of medicine, Robert Whytt. The omission is explained as an over-sight, yet this must be questionable. The Town-Council made another medical appointment on February 9 1726, which was included in the minutes. Joseph Gibson, a surgeon-apothecary, was appointed professor of midwifery in the city. Could the one appointment have been remembered, and the more important university appointments overlooked? No salaries were involved, so conceivably the Town-Council would not have needed to be informed of the precise nature of the negotiations the magistracy concluded with the university and the College of Physicians.

There is no doubt the appointments were made in 1726. It was recorded by the university in October of that year, when two of the four professors were given voting privileges in the Senatus Academicus,[76] and the College of Physicians noted it in its minutes the following month.[77] The President of the College recorded the thanks he had received from the Regents for the assistance the College had given in the past in examining degree candidates ". . . and that now there was sufficient number of professors of

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[76]Senate Mins. Oct. 12 1726.

[77]Phys. Mins. Nov. 1 1726.

medicine to make a Faculty of Medicine . . . they would not trouble the College any more upon that head."[78] They did not. Nor did the College ever pursue the university again for a voice in examining degree candidates. The Caledonian Mercury contained the usual advertisement in September 1726 publicizing the lectures of Monro, Alston, and the four fellows of the College of Physicians, referring to the latter as the "professors of medicine," although there is no mention of their association with the university.[79] Monro's lectures were to be given, it read, from the "anatomy theatre" of the university, Alston had moved to Physicians' Hall, and the four professors of medicine were to teach from the "chemical elaboratory adjoining the university."[80]

By a felicitous congruence of circumstances, therefore, the interests of a number of parties came together in a resolution in which there was no place for the Incorporation. The Town-Council enhanced the image of the city and the university by the establishment of a faculty of medicine with the power to confer the degree of M.D.

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[78] Ibid. It should be noted that, as the College suggested, there were sufficient professors of medicine to form a faculty. However, they were not referred to in the Senate minutes as a faculty of medicine. The entire professorial body was "the faculty" until 1763, when it began to break down into individual disciplines--faculty of arts, faculty of divinity, faculty of medicine.

[79] Caledonian Mercury Sept. 6 1726.

[80] Ibid.

The College of Physicians, it seems clear, established the principle that only fellows of the College were entitled to become professors of medicine, and that only professors of medicine were to constitute the faculty of medicine. This was certainly the understanding of a later generation. The commissioners enquiring into the Scottish universities in 1826 were told that "In 1726 there is an act of the Senatus Academicus directing all candidates for the degree of M.D. to be examined by the Professors of Medicine," and the faculty of medicine "is held to consist only of those professors who are in their commissions styled Professors of Medicine, or of the Theory or Practice of Medicine."[81] In illustration of this provision, W.P. Alison pointed out that the commission of Charles Alston, professor of botany in the King's Garden, was changed when he became a professor of botany in the university in 1738 to read "professor of medicine and botany" in order that he might become a member of the faculty of medicine. Alexander Monro was not a member of the faculty of medicine while he chose to remain a surgeon and member of the Incorporation of Surgeons. In 1757 he finally relinquished his membership of the Incorporation and became a fellow of the College of Physicians precisely in order to have his commission changed to "professor of medicine and anatomy" and thus become a member of the faculty with the privilege of examining degree candidates.

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[81] P.P. 1837/XXXV Evidence, Oral and Documentary, taken by . . . the Commissioners . . . for Visiting the Universities of Scotland Vol. I University of Edinburgh London 1837. App. 108 Order XIV.

Teaching was a secondary consideration. They all taught, but only Monro brought to this task a conscientiousness and commitment to the needs of the student.[82] The professors of medicine were not given space in the university, and the teaching they did was from their own private business enterprise in the chemical laboratory. It was more than a little disingenuous, therefore, for John Monro to argue in 1725 "that the Schools of Medicine are now on such a Footing in Edinburgh that no Students need go Abroad to be educated, unless for the opportunity of Hospitals, to learn the Practice in. . . . In a little time," he continued,

> the Reputation of a Scots educated Physician or Surgeon would be Such that our Young Gentlemen, who incline to follow their Business abroad, would be sooner and better provided for in the Plantations, Sea or Land Service; which cannot but be a View of Advantage to every Parent who has any Number of Sons to educate.[83]

John Monro's statement was true enough. Teaching was well-established--as the Incorporation had been boasting, in words John Monro paraphrased most accurately, for the previous forty years--yet in this pamphlet the "Schools of Medicine" to which John Monro referred were not those in which the Incorporation had an interest, and in fact one would not even have been aware of its existence.

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[82] See Chapter VI.

[83] A Letter from a Gentleman . . . op. cit. 1725, pp. 9 and 10.

II

Only the "opportunity of Hospitals," John Monro wrote, was absent in Edinburgh. The idea of establishing a hospital had been raised at least once before--in the 1690's--but had come to nothing. The simple problem of financing such an institution in the political and social disruption of the time is sufficient to explain the apparent lack of interest. In 1725 the times were more propitious. The Fisheries Company in which some of the magistrates had an interest was by 1725 considered unlikely to succeed, and the proprietors were looking for another outlet for their capital.[84] Three projects were being considered: investing the money in the Society for the Propagation of Christian Knowledge, erecting a Linen Manufactory, and establishing a hospital for sick and wounded. (The terminology suggests that the hospital proposal may have come from naval sources.)

Monro's pamphlet was written in support of the third proposal. He obviously pointed to its utility in complementing the programme of medical education which he was fostering in Edinburgh. Students would be relieved of the expense of going abroad and, moreover, they would be "under the eye rather than exposed to the frivolities abroad."[85] John Monro knew, however, that such a scheme

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[84] Ibid. p. 4.

[85] Ibid. p. 9.

had to appeal to a wider audience than the medical community. It described an institution which would promote national pride and national recovery. Such a complete medical education that could be offered if a hospital were established would enhance the prestige of Scots abroad and, moreover, improve the civic reputation of Edinburgh. All Europe, he argued, except Scotland had such a hospital; there was St. Thomas' and St. Bartholomew's in London, the Hotel Dieu and the Charité in Paris, and "ne'er a petty Town in Holland, Germany, France or Italy but what have their Lazaretto's."[86] And it was an institution where the human stock of the country could be improved. "The Strength and power of any Community," he declared, "depend upon its Riches and Numbers of Inhabitants. I imagine it would be no hard matter to demonstrate That an Hospital for sick and wounded would encrease both in this Country."[87] Most of the beggars are sick, he continued, or pretend to be; "here would be a proper Place where their Maladies would be remedy'd or Frauds detected. . . ."[88] It was not the first occasion he had used this argument; in his earlier pamphlet he had spoken of the duty and necessity of providing medical aid for the poor, "for so many as are recovered in an Infirmary are so many working Hands gained in the Country."[89]

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[86] Ibid. p. 11.

[87] Ibid. p. 8.

[88] Ibid.

[89] Referred to in An Account of the Rise . . . op. cit. 1730.

Such words would have rung responsive chords in the minds of landowners in Edinburgh. By a series of proclamations of the Privy Council in the 1690's, they had effectively become responsible, in conjunction with the kirk session, for poor relief on their estates.[90] It was not a responsibility they particularly resented; in fact Prof. Smout argues that by and large they "gloried above all else in the paternal quality of their rule."[91] Yet if we are to believe the opinion of the Haddington Justices of the Peace, by 1724 the poor were becoming an onerous responsibility. "The Country is heavily burdened and oppressed by Multitudes of Strange Beggars," they argued, and ordered the heritors of the county to meet to consider how to deal with them and at the same time to discuss how best to maintain their own poor.[92] In the following year the Honourable Society for Improvers in Agriculture sent out a broadsheet to the J.P.'s of all the shires, recommending in words very similar to those used by John Monro, the action taken in Haddington.[93] They were concerned, they said, by the vast numbers of "Idle, vagrant Beggars, many of whom are very able to work . . ." and who were "so many Hands lost to the

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[90] R. Mitchison "The Making of the Old Scottish Poor Law" Past and Present (63) 1974, pp. 58-93.

[91] T.C. Smout A History . . . op. cit. 1969 p. 263.

[92] Broadsheet by The Honourable the Society for Improvers in Agriculture Feb. 1725.

[93] Ibid.

Commonwealth." Many of these people, the Society claimed, were in fact professional beggars and thieves, and the vagrant population provided "a Nursery for daily multiplying that Tribe . . ." Moreover, by "extorting Alms from well meaning People" they effectively sabotaged the distribution of charity "to the real Objects thereof. . . ."

> Whereas if the good Laws of this Kingdom were duly put in Execution they would be forced to work, and become useful to the Publick: the Country would thereby be eased of the Burden they are exposed to by such Vagabonds, and so might be well enabled to contribute to the Maintenance of the Old and Infirm, who cannot work.[94]

John Monro's promotion of the hospital scheme, therefore, could count on the support of landowners, and it is also clear that he could count on the enthusiastic support of the College of Physicians. Free medical advice to the poor was traditionally a moral responsibility--a sense of noblesse oblige--accepted by physicians, and it was to be expected, therefore, that one of the first resolutions of the College after its establishment in 1681 had been to appoint persons from the College "to be physitians for the poore."[95] Twice a week two physicians were required "to wait upon poor People [in the College building] whose cases they consider, and give their Advice and Receipts gratis;"[96] By the beginning of the eighteenth century,

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[94] Ibid.

[95] Phys. Mins. Feb. 6 1682; Phys. Mins. Feb. 10 1682.

[96] A.P.S. xi Mar. 17 1707.

however, there were signs that the physicians were losing control of the function of the service. It was becoming irrelevant in the face of the extreme hardship being experienced by the poor of Scotland at that time. We get a real sense of the destitution of the period in the description of the poor by Robert Sibbald, a man not given to sensationalism, in 1709 when he wrote

> . . . for Want, some Die by the Way-side, some drop down in the Streets, the poor sucking Babs are Starving for Want of Milk, which the empty Breasts of their Mothers cannot furnish them; Everyone may see Death in the Face of the Poor, that abound everywhere; the Thinness of their Visage, their Ghostly Looks, their Feebleness, their Agues and their Fluxes threaten them with sudden Death, if Care be not taken of them.[97]

It was not surprising, therefore, to find the number of applicants for medical relief appearing at Physicians Hall increased, forcing the College to extend attendance and fine absentees.[98] Moreover, the College began to explore the possibility of underwriting the cost of their prescriptions themselves.[99] We do not know precisely why. One source tells us that the poor were exchanging the prescriptions for food rather than medicines. William Eccles tells us that the surgeon-apothecaries were undermining their charity by demanding exorbitant prices for the medicines.[100] For whatever reason, in 1706 the

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[97] R. Sibbald Provision for the Poor in Time of Dearth and Scarcity Edin. 1709.

[98] Phys. Mins. Oct. 25 1705.

[99] A.P.S. xi Mar. 17, 1707.

[100] W. Eccles Historical Account . . . op. cit. 1707, p. 33.

College ordered that the fines imposed for non-attendance should be used to defray the costs of medicines.[101]

The application of fines was obviously neither a substantial nor a dependable source, and in the course of the controversy over the Surgeons' Bill of 1707 we find William Eccles, the President of the College, outlining another scheme the College had obviously been considering.[102] Eccles understood that the major problem lay in funding the drugs. He therefore proposed the establishment of a Dispensary funded by subscriptions, to which he claimed "several charitable persons . . . have already made offers. . . ."[103] Under this scheme everyone who subscribed £60 scots would be able to receive drugs and medicines "at prime cost." In addition, anyone able to produce a certificate from a magistrate, minister or physician "that they are poor" would also be eligible for the medicines at cost. The Dispensary would operate according to a Book of Rates and be under the control of the College of Physicians, who would inspect it monthly.[104]

Eccles' subscription plan was not taken up, as far as we know, but in that same year additional financial assistance for the physicians' medical service to the poor

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[101] Phys. Mins. Aug. 5 1706.

[102] W. Eccles Historical Account . . . op. cit. 1707, pp. 29-35.

[103] Ibid. p. 33.

[104] Ibid.

was received from a mortification by the widow of an apothecary, Mary Erskine, of 1250 merks to the College, to be used as principal to establish a fund for supplying drugs to the poor.[105] This fund became the basis of the College's "Repository for medicines for the sick poor." The Dispensary was supplemented by mandatory contributions and service by licentiates and fellows of the College and operated at least until 1717.[106]

When, therefore, John Monro took up the question of a hospital in the early 1720's, it is not surprising to find the College of Physicians enthusiastically supporting the idea. We find no evidence that the College made any particular effort to promote the hospital as a teaching aid for medical students, but they did articulate their conception of the hospital for providing more effective and rational treatment of the sick poor. In 1729 we find the College echoing the line of reasoning developed by John Monro and the Honourable Society in this regard before the General Assembly. Such an institution was needed, it argued, to provide the poor with accommodation where effective treatment could be administered, and also

> will be a Cheque upon many idel [sic] and Slothfull persons, who under pretence of some slight Lameness Sickness or weakness give themselves up to begging and become a burthen

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[105] Phys. Mins. June 27, 1707.

[106] Phys. Mins. Feb. 3 1708, Nov. 4 1712, Aug. 1 1716, and Feb. 5 1717.

> upon ye Country, ffor [sic] such being brought into ye hospital and Cured will be debarred from begging and the realy poor and uncurable Lame or sick will ye more easily and Chearfully be pityed and Supplyed by Charitable persons. . . .[107]

John Monro's advocacy of the use of the Fisheries stock was obviously successful, because it was released to the College of Physicians, and in the first reference to the hospital in College minutes the President announced early in 1726 that "according to their desire he and several members had sett on foot a subscription for erecting and maintaining an Infirmary or Hospital."[108] The subscription goal was £2000 st. By February 1728 this goal had been reached[109] and over the next two years the money was called in.[110] The subscribers were almost exclusively wealthy landowners and professional men--largely the judiciary and medicine--with only the odd jeweller and teller from the bank representing any wider popular appeal. £731.7.7 1/2d was assigned from the stock of the Fisheries company, and here the percentage of merchants was much higher, but still contained significant numbers of landowners and professional men. The response of the Kirk is

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[107] Phys. Mins. May 7 1728 "Address to the General Assembly."

[108] Phys. Mins. Feb. 1 1726.

[109] Minute Books of the Royal Infirmary of Edinburgh [Inf. Mins.] Feb. 19 1728.

[110] There is a complete list of donors in the Infirmary Account Books.

difficult to assess. The College of Physicians had petitioned the General Assembly in May 1728[111] to authorize voluntary collections in the parish churches. It was not until the following year, after the infirmary had actually been established, that the General Assembly accepted this petition.[112] The response appeared to be generous enough--£233.10.0 1/2d collected up to March 1730, and a further £900.19.0d in the following 18 months; yet Arnot records that subscription by church donations was very poor, that ten out of eleven clergy declined to respond to the recommendation of the General Assembly.[113]

The infirmary which opened its doors on August 6 1729, in a house leased from the university at the head of Robertson's Close, adjacent to the "elaboratory" of Rutherford and Co., was therefore very much the child of the landowning/professional interests in the city. In this house, which was utilized until 1741, accommodation was made for six and eventually ten patients. Not an ambitious enterprise, but one in which from the beginning the College of Physicians had a controlling interest. Of twelve members of the original committee who met in February 1728 "to draw subscriptions as promised and draw up a plan for the direction and management of an Infirmary, to lay before a

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[111] Phys. Mins. May 7 1728.

[112] Act of the General Assembly of Scotland May 11 1729.

[113] Hugo Arnot History of Edinburgh Edin. 1779, p. 546.

general meeting of contributors," seven were members of the College of Physicians.[114] The constitution of the infirmary called for a committee of twenty general managers, of whom five were to be of the College of Physicians. The day-to-day operation of the institution, however, was left in the hands of twelve ordinary members, elected annually from the general managers, and of these twelve the five members of the College of Physicians were always elected.[115] One of the duties of the ordinary managers was to make monthly visitations, in pairs, each pair making two visits a year. The rotation was decided at the annual general meeting, and always paired a physician with a layman; thus the College had an almost continual supervisory role in the day-to-day operation and management of the infirmary.

The infirmary had been promoted as a charitable institution. This did not mean, of course, that it was open to all. Patients were to be admitted who had "by their work and honest industry been usefull to the Common wealth."[116]

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[114] Inf. Mins. Feb. 1728.

[115] The twenty general managers were to be the Lord Provost, the Deacon-Convenor, the President of the Royal College of Physicians, 4 members of the Royal College of Physicians, the professor of anatomy, 2 surgeons (3 if there were no professor of anatomy), one Senator of the College of Justice, one member of the Faculty of Advocates, one member of the Society of Writers to the Signet, one minister of the gospel, 6 donors. Four to six of these were to retire each year. As Alexander Monro pointed out in his Autobiography, since the professor of anatomy was the only manager who held his office in perpetuity, he was the only permanent member of the board of general managers.

[116] Inf. Mins. Nov. 2 1730 "Rules of Admitting and Dismissing and Behaviour of Patients."

The prospective patient was required to produce a certificate from some person of "known good Credit and Character" and to ensure that the infirmary was not "constantly possessed by a few" or endangered by "adding new Diseases. . . ."

> Therefore no persons Incurable, very old and Decripit, no Idle vagabond and Beggars, none taken with tedious Lingering Diseases, Such as the Kings Evil, or mallign Infectious ones, as french pox, Itch, etc. shall be admitted.[117]

One has to wonder exactly what the College of Physicians and the Monros had in mind with regard to the availability of the infirmary as a teaching centre. Medical attendance on the six patients in the infirmary had been guaranteed in August 1727 when the College corporately had committed all its members to attend in pairs in turn on a fortnightly basis.[118] The Incorporation of Surgeons was not given equal privileges. Perhaps it was not initially planned to exclude them. The surgeons had been approached by the organizing committee of the infirmary in 1727, but characteristically they had argued amongst themselves over the financial arrangements for supplying medicines.[119] They obviously insisted all members should be allowed access to the infirmary, and were prepared to provide medicines for the patients free of charge, but no

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[117] Ibid.

[118] Phys. Mins. Aug. 1 1727.

[119] A Vindication of the Managers of the Royal Infirmary of Edinburgh From The Aspersions cast upon their Conduct in a late Pamphlet. Edin. 1737, pp. 8-9.

agreement could be reached on how the medicines should be funded. Should it be a public (i.e. Incorporation) fund, a private corporate fund, a communal shop established in the infirmary, or should each surgeon-apothecary supply his own?[120]

As an interim measure the Incorporation offered its services to the infirmary and agreed to supply medicines gratis for two years, but it was too late. In January 1729 the managers accepted the offer of Alexander Monro, who "generously offered to provide the Infirmary with medicines for a year" at cost, and to perform surgical operations when he could.[121] The Incorporation protested the exclusion of all but one surgeon-apothecary, but in April the managers argued that a corporate commitment was not acceptable, the infirmary could not operate on "such a precarious footing"[122] because "no such Act . . . Can bind any particular Member, to a Deed and Service of Charity."[123] Unless the managers were being consciously disingenuous, we have to read this statement as a clear admission of the relative value the managers, as representatives of informed public opinion, placed on the services of the physicians

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[120] Ibid.

[121] Ibid. Surgs. Mins. Jan. 10 1729; Inf. Mins. Jan. 13 1729 and Mar. 3 1729.

[122] A Vindication . . . op. cit. 1737 p. 7.

[123] Inf. Mins. Apr. 7 1729.

and surgeons; they could accept such a vague corporate commitment from the physicians because they were not essential to the operation of the infirmary. They merely supplied it with the proper intellectual credentials.

The managers went on to suggest that as Monro had at the same meeting renounced the obligation they had previously made to him, individual surgeons should submit a written contract setting out in detail the terms of service they were prepared to offer. Three months later they accepted a proposal from Alexander Monro, John McGill and George Cunninghame (the two recalcitrant surgeons in the 1721 fracas), Francis Congalton, John Douglas and Robert Hope to perform the duties of surgeon and apothecary monthly in rotation, supplying drugs "from their own shops" gratis until the number of patients exceeded ten.[124] Under this medical organization the infirmary operated for the first six years.

As a teaching aid, therefore, the infirmary was only available to members of the College of Physicians and six surgeon-apothecaries. Moreover, it was available to only those students and apprentices the attendant physicians and surgeons chose to certify. A year after the infirmary opened, the attending physicians and Alexander Monro had complained of the large numbers of apprentices "and others"

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[124] Inf. Mins. July 7 1729; An Account of the Rise . . . op. cit. 1730 p. 6.

constantly milling around, "who have no title to be admitted,"[125] and the managers ordered that none but students of physick or apprentices possessing a ticket issued by the attending physician or surgeon were to be admitted.[126]

In the early 1730's, therefore, we have this small infirmary of six beds, being attended in twos by the entire fellowship of the College of Physicians, and by six surgeon-apothecaries. With the exception of Alexander Monro, whose work we will discuss in chapter VI, there is no evidence that teaching was actively pursued by the medical attendants. Plans were being formulated for enlarging the infirmary[127] and by 1736 the necessary first step in this direction--possession of a royal charter to safeguard its funds--had been taken.[128] The managers immediately began overtures to purchase property for a new infirmary.[129] George Drummond later claimed, as we shall see, that facilities for instructing students was always present in the minds of the managers, but there is no mention in the minutes of any dissatisfaction with the existing arrangement.

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[125] Inf. Mins. Nov. 2 1730.

[126] Ibid.

[127] Inf. Mins. June 4 1733.

[128] Inf. Mins. Nov. 4 1736.

[129] Inf. Mins. Nov. 29 1736. At this point they are negotiation to buy "Thomson's Yards." It is not clear whether this is a house or land, or both.

Criticism of the medical organization of the infirmary came from the excluded surgeon-apothecaries, who in March 1736 voiced the predictable grievance that the "Infirmary Surgeons" were exploiting their privileged position. It was claimed they were able to charge a higher apprenticeship fee, and moreover were admitting the apprentices of other surgeons to the infirmary for an additional, private fee of five guineas a year.[130] In retaliation, some excluded surgeon-apothecaries were proposing to establish their own hospital.[131] William Graeme had intimated in 1727[132] that amongst the surgeon-apothecaries were some men pursuing the study and practice of surgery more fully. It is likely to be this group of surgeon-apothecaries making the proposals for their own hospital.

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[130] Proposals from the Erectors of the Surgeons Hospital, to the Managers of the Infirmary. Mar. 31 1736; Inf. Mins. Apr. 4 1736. A surviving indenture of one of the infirmary surgeons--Robert Hope--dated 1741 records a fee of £105 st., quite a considerable variation from the standard £50-£60 st. for a five-year apprenticeship. This may merely reflect some unusual circumstance in this particular contract, but it may equally indicate some truth to the allegations made by the excluded surgeons.

[131] There was a considerable pamphlet warfare over the issue. In addition to the above, see Memorial by the Managers of the Infirmary, in Answer to the Proposals given in to them by Mr. John Kennedy Deacon of the Surgeons, for himself, and in Name of Eleven other Surgeons. June 7 1736; Reply from the Managers of the Surgeons Hospital, to the Memorial given in to them by the Managers of the Infirmary. July 1736; Memorial concerning the Surgeons Hospital. Feb. 18 1737; Appendix to The Memorial concerning the Surgeons Hospital; A Vindication of the Managers of the Royal Infirmary of Edinburgh, From the Aspersions cast upon their Conduct in a late Pamphlet. Edin. 1737.

[132] An Essay for Reforming . . . op. cit. 1727 p. 11.

As we shall see, the proposal was genuine and seriously pursued. It was also intended, however, to bring pressure upon the managers of the infirmary to open its doors wider, because the proposers of the new hospital immediately began negotiations for the amalgamation of the two institutions on the condition that all members of the Incorporation be allowed equal access to the infirmary.[133] The surgeons pointed out that although many of the original contributors had understood that the infirmary would provide general access to both patients and "young Gentlemen Students in Physick and Surgery," neither of these conditions had so far been met.[134] Prospective patients were carefully screened according to the regulations of 1730, and access of students and apprentices was in the gift of the physicians and a few of the surgeons.

George Drummond, on behalf of the managers, replied to these proposals in June 1736, in which he agreed that the intention had always been to provide "Students of Physick and Surgery all Opportunities of Education in their Power."[135] Limitations on the size of the house had prevented this, he went on, "But, so soon as a large House can be got, that Inconveniency will be removed; and no Time

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[133] Reply from the Managers of the Surgeons Hospital . . . op. cit. 1736, p. 17; Appendix . . . op. cit. p. 21.

[134] Proposals from the Erectors . . . op. cit. 1736, p. 7.

[135] Memorial by the Managers of the Infirmary . . . op. cit. 1736.

is to be lost in providing one."[136] However he added that he was at a loss to know how such large numbers of surgeons and apprentices could be accommodated, and invited the surgeons to suggest how this could be achieved.[137]

The conciliatory tone of the managers now was in part no doubt due to their dismay at the thought of the competition another medical institution would bring to the infirmary. Perhaps also contributing to their attitude was the fact that the execution of Andrew Wilson had taken place just six weeks before and Captain Porteous was at that time lying under guard, amid a very hostile and restless population, awaiting trial in July. As H. Dickinson has pointed out,[138] the mob responsible for executing Porteous was largely composed of craftsmen and their apprentices, and while there is no reason to connect the Incorporation of Surgeons directly with that affair, the managers of the infirmary were perhaps at that time little inclined to antagonize any of the crafts.

The surgeons responded to Drummond's enquiries early the following month, dismissing limitations on the number of attending surgeons, pointing out that all the surgeons would gladly supply medicines gratis for the privilege of access to the infirmary. "For our Part we own,"

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[136] Ibid.

[137] Ibid.

[138] H. Dickinson "The Porteous Riot" Scottish Labour History Society Journal 1976 pp. 21-40.

they wrote, "that our Attendance there would be of great Advantage to our Apprentices, and this was a considerable Motive to us in our present Undertaking."[139] If limitations on the number of apprentices were necessary, which they conceded it probably was, then they insisted that it must be done equitably. They proposed that each apprentice or student should pay a premium to the infirmary for the privilege of attending there, independent of their obligation to their masters, emphasizing the financial benefit to the infirmary which this additional benefit would bring, not only to the immediate finances but by enabling the infirmary to support more patients.[140]

Here the matter rested for the time being. The managers of the infirmary received its royal charter in August, 1736 and pursued plans for expansion.[141] The surgeons, for their part, opened their own hospital on July 1 1736, serving "as many as our Hospital and Funds could accommodate" with apparently no inhibitory restrictions on patients, and offering advice and all proper medicaments and dressings "to any who should be able to come to, or lodge near the Hospital."[142] The hospital was financed

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[139] *Reply from the Managers of the Surgeons Hospital . . .* op. cit. 1736, p. 15.

[140] *Ibid.*

[141] See note 129.

[142] *Memorial concerning the Surgeons Hospital . . .* op. cit. 1737.

by a mutual "Bond of Erection" entered into by the participating surgeons, "obliging each of us to contribute Money and Medicines sufficient to set this good Work a-going, and to give our Attendance gratis during our Life."[143] In addition, they had requested their "Students and Apprentices" to pay "something" into the Hospital fund annually, which the surgeons claimed had been agreed to "most cheerfully."[144] They projected the hospital as a "School for Practical Surgery," which, they claimed, would improve the already considerable fame enjoyed by the country for educating surgeons, and echoed the now pervasive argument that such a school would prove profitable to the country "by being such, how many thousand Pounds will be saved to our Country in a few Years, which now are spent in Leyden and Paris."[145] A "chirurgical theatre" had been fitted up, they claimed, which would accommodate 50-60 students, and they had plans for the establishment of a school of midwifery, "a Thing altogether new in Scotland," for the benefit of surgeon apprentices and midwives, the latter being instructed "in the Theory and Practice of that Art, and as much Anatomy as is needful for that purpose."[146]

The surgeons made it quite clear that they wanted their hospital to be a teaching hospital which would train

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[143] Ibid. p. 5.

[144] Ibid. p. 8.

[145] Ibid.

[146] Appendix . . . op. cit. pp. 26-27.

their apprentices in skills that were not taught in the physicians' infirmary; ". . . tho' our Apprentices come to us for their Education," they complained, "yet they must have the most of it from others, tho' not without a Premium."[147] "Monopolies of all Kinds oppress many to enrich a few", they continued; "Monopolies discourage all industrious fair Traders, to exalt those who have the Direction and Management of the exclusive Privileges."[148] By their scheme, they argued,

> all the Surgeons and all the Apprentices become Donors, and have equal Access to the Hospital; In which Case, all being on a level, it becomes a Perquisite to none, but enriches the Hospital by our Donations, and improves most of the Surgeons in the Nation. The Apprentice and Surgeons' Fees are kept moderate; the Poor are serv'd, while none of them can make any Thing by it, because all are admitted.[149]

For two years, therefore, two hospitals operated in Edinburgh. One provided a rational administration of medical care for the poor, as much an extension of the administration of poor relief as an institution for curing illness; the other provided facilities for surgical operations and training surgeon-apothecaries. One was financed by charitable donation; the other financed by fees to users. Until the middle of 1738 the two institutions appeared destined to remain separate. In April 1738 William Adam

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[147] Ibid. p. 17.

[148] Ibid. p. 24.

[149] Ibid. pp. 24-25.

laid before the managers of the physicians' infirmary plans for an enormous building to accommodate over 200 patients,[150] containing a large amphitheatre for surgical operations and extensive seating capacity for attending students and other observers. Moreover, in the calculation of income for this new building, the managers estimated for the first time a contribution of 200 guineas from the sale of 100 tickets to students.[151]

No-one can say to what extent the establishment of the surgeons' hospital influenced the design or the extent of these plans, but the surgeon-apothecaries claimed that their activities had altered the managers' thinking. ". . . a few Patients got into the Infirmary formerly," they wrote, "and with Difficulty, and after repeated Solicitations; whereas now, they covet them, and are resolved to enlarge their House, and extend their Schemes."[152] Moreover, the surgeon-apothecaries were working on similar plans of expansion. They had also commissioned William Adam to design a hospital, and the plan received the Warrand of the Guild Court on May 10, three weeks after Adam had presented the infirmary plan to the managers.[153] The surgeons' new hospital was in many respects a miniature of the infirmary,

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[150] Inf. Mins. Apr. 20 1738.

[151] Ibid. Total income was estimated at £760.

[152] Appendix . . . op. cit. p. 26.

[153] See Appendix VIII "Plan of Surgeons' Hospital".

accommodating 43 patients and incorporating a "chirurgical-theatre" with seating capacity for an unspecified number of students.

The publication of these new plans appeared to have its effect, because nine days later the managers of the infirmary capitulated and gave the surgeon-apothecaries the free access to the infirmary they wanted, "In order to preserve one equality amongst the Surgeons of Edinburgh and that their apprentices and students may have equal opportunities for their improvement by serving and attending in the Royal Infirmary."[154] The managers also outlined for the first time the terms on which students had access to the infirmary, showing that the patronage now lay not with any individual physician or surgeon but with the managers.

> All the young gentlemen attending the study of physick or surgery in Edinburgh, either as apprentices or students, shall be privileged to attend the patients in the Infirmary in such order and under such regulations as shall from time to time be admitted and fixed by the managers, upon each of them paying such an annual premium to the treasurer of the infirmary as the managers shall think fit to determine and appoint to be applied towards defraying the Charges of the house and Patients, untill such time as the managers of the infirmary shall think fitt to admit them Gratis upon the Revenues Becoming Sufficient to defray the whole Charge of the Infirmary.[155]

The managers of the infirmary and the proprietors of the surgeons' hospital had therefore resolved their

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[154] Inf. Mins. May 19 1738.

[155] Ibid.

differences and we hear no more of the new surgeons' hospital. The old building they had occupied became the property of the infirmary and the two institutions were amalgamated into one, incorporating both functions and both forms of financing. Admittance policies remained the same; the infirmary continued to be a charitable institution designed to provide assistance for the deserving poor and financed by voluntary contribution. It also became an educational resource for students and apprentices interested in either general practice or surgery and drawing a good proportion of its income from the sale of student tickets. The Incorporation of Surgeons accurately summed up the successful conclusion of the negotiations when they recorded in their minutes how satisfied they were and how delighted the public would be to see the physicians and surgeons uniting

> to promote this most useful peice [sic] of Charity, wherein piety and policy joyfully Concur, the one to relieve Sick and distressed poor, and the other to breed up able Physicians and Surgeons for the honour and Service of the Country and thereby saving money to the nation by compleating their Education at home.[156]

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[156] Surgs. Mins. June 8 1738.

CHAPTER V

SURGEON-APOTHECARIES AS GENERAL PRACTITIONERS

> . . . almost all sensible Men come to Years, can make the best Judgement of their own State of Health, and have also the best decerning of what may be proper for younger Persons that are under their care.[1]

In the previous four chapters we have described growth and changes within the Incorporation of Surgeon-Apothecaries[2] up to the turn of the eighteenth century, and its efforts to substantiate those changes politically. The efforts were largely unsuccessful; by the 1730's the Incorporation no longer exerted even the political power it had previously enjoyed, and new medical institutions had emerged from which it was largely excluded. The work it had done to encourage the study and practice of medicine in Edinburgh could not be reversed, however, as easily as its political fortunes. In this chapter we will consider in more detail the work of the surgeon-

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[1] Archives - R.C.S.E. "Petition to Parliament by The Lord Provost, Baillies and Town-Council of Edinburgh for themselves, and their Community, and all the Leidges that may be concerned." n.d.

[2] Deciding on a proper title for this body as it entered the eighteenth century is difficult. In the interests of clarity and brevity, the above will be used to describe the membership henceforth.

apothecaries; what, essentially, had they been so anxious to preserve?

First, it is necessary to make two points about nomenclature. In the two bills brought before the Scottish parliament in 1700 and 1707 the Incorporation had claimed the right for its members to practice as physicians; the College of Physicians itself had expressed the fear that the Incorporation was engrossing the study of medicine by the 1720's.[3] Surgeon-apothecaries were, in effect, working as general practitioners. Some physicians, too, could probably more accurately be described as general practitioner. The College of Physicians of Edinburgh had experienced expansion of its membership by the turn of the eighteenth century, and from what we are able to determine about this expanded membership it is probably not unreasonable to conclude that it contained members with a less restrictive view of the role of the physician than the one professed by the College itself.[4] This certainly appeared to be what was happening within the membership of the College of Physicians of London during this period.[5]

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[3] See page 124.

[4] See pages 79-81.

[5] See Sir George Clark A History of the Royal College . . . op. cit. 1964, vol. II p. 466.

In effect, therefore, in this chapter, we will be looking at the work of the general practitioner in and around Edinburgh in the early decades of the eighteenth century. He was more than likely to call himself a surgeon-apothecary, and if a resident of Edinburgh to be a member of the Incorporation of Surgeon-Apothecaries, and our discussion will assume this to be the case. It would not be unlikely, however, to find them amongst the ranks of the physicians, particularly in cases where a father had been a surgeon-apothecary, or the man had been apprenticed to a surgeon-apothecary before obtaining a medical degree.

I

Perhaps the most important principle surgeon-apothecaries brought to the study of medicine was the notion of "liberty" in medical practice; the rejection of constraints they argued the College of Physicians wished to impose. The Incorporation of Surgeon-Apothecaries consistently defended the liberty of individual practitioners, and the general public, to pursue their objectives in the market place free from unnecessary restrictions. It was cheaper for the patient to have one attendant than two, it argued in objection to the Decreet of Separation,

> . . . all constraints being heavie burdens, because they are against liberty; and such constraints as these being expensive impositions, since both of these must be pay'd, not only for

> their Drugs, but for their attendance: whereas, if both were joyned, the attendance would be the same.[6]

The principal witness for such arguments was always custom, which, it was implied, always showed that men pursued their goals through the most utilitarian and economic means. "And how can it be imagin'd", the surgeon-apothecaries asked,

> that these two imployments should be incompatible in one Person, since this Kingdom for many hundreds of years hath been served by the same Person exercising both. And the most eminent in both imployments have been, and still are, such as exercise both.[7]

The same theme was pursued in 1707 by the Town-Council "for themselves, and their Community, and all the Leidges that may be concerned", in support of the bill brought before parliament in that year on behalf of the surgeon-apothecaries, to absolve patients from the necessity of obtaining a prescription from a physician for medicines they wanted.[8] Forshadowing to a remarkable degree the arguments of Adam Smith, the petition proposed a free market economy in medical service. The proposal requested toleration for all medical practitioners, including quacks, justice being left to the ability of the market economy to

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[6] Information for the Chirurgions and Chirurgion-Apothecaries of Edinburgh: And the Magistrats of the said Burgh, for their special interest. Against the Apothecaries there. n.d.

[7] Ibid. p. 2.

[8] "Petition to Parliament by The Lord Provost . . ." op. cit. n.d.

reject incompetence and to reward ability and success.

People should be free, the petitioners argued, to call in whomever they wished when illness struck "especially seeing that it is well-known that almost all sensible Men come to Years, can make the best Judgement of their own care."[9] The petitioners then went on to discuss the enormous diversity of medical care which the public needed.

> Who can consider the great Varieties of the Dispositions of Persons and the Accidents that may befal them in the Matter of their Health, and not look upon this Pretence of the Physicians that they should be the only Directors of Medicines, except in Cases of Necessity and Charity . . . without construing it to be a heavy usurping upon the Liberty of Mankind, and the condition of their manifold Frailties. How many are there overtaken with Diseases, that neither can nor will imploy Physicians, but rather prefer others, with whom they are better acquainted, or to whom they have more easy Access, who yet will neither confess the Case of Necessity nor Charity: How many Diseases are Incident to Women or Children, wherein others, besides Physicians, are judged more happy, and may be far more easily employed? There are also Several Diseases, wherein Men must and will use their own Liberty, specially in Imploying Chirurgeon-apothecaries, or otherwise be utterly Ruined. And it were indeed endless, to go through all the Cases that may occur even Abstract from Necessity and Charity, wherein the most part of the Patients will incline, rather to the Skill of Chirurgeon-apothecaries and their good Acquaintance, than to go to Physicians in the first Instance. And therefore Your Petitioners humbly conceive, That the foresaid Overture is most justly calculat for the Liberty and Frailty of Mankind, and that the Caution therein-insert of leaving Unskilled Practice to its just Censure, is all that the Physicians, or any other concerned, can pretend to.[10]

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[9] Ibid.

[10] Ibid.

To show how radical such ideas were, let us compare them with the opinions expressed by the President of the College of Physicians on how medical practice should be organized, in his protest against the 1707 Bill.[11] Physicians should not practice pharmacy, he believed, and "such who have been Examined and Approved off /sic/ by competent Judges . . . /should/ take moderate fees of the Rich and serve the Poor gratis.[12] Surgeons were to restrict themselves entirely to surgical operations and the application of external remedies, "but are restrained from selling, Advising or Administering the Internal."[13] Apothecaries were not to give instructions or advice when they delivered medicines, and "Quacks, Mountebanks, Undertakers of Cures, and other pretenders to the Art of Physick, that are not examined and approved of as above, are /to be/ subjected, the Richer of them to Pecuniary and the Poorer to Corporal Punishment."[14] The quality and price of drugs should also be controlled more rigidly, "Nicknaming and disguising cheap and ordinary Medicines to extort great prices for them" to be abolished by the preparation, by "a committee" of a Book of Rates.[15]

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[11] Wm. Eccles Historical Account . . . op. cit. 1707, pp. 29-35.

[12] Ibid. p. 34.

[13] Ibid.

[14] Ibid. p. 35.

[15] Ibid. pp. 29-30.

The difference between the two points of view is immense. The former argued from a point of view much more sensitive to public opinion and public demand. Moreover, it conveyed a strong sense of moral righteousness; surely no-one, it implied, would deny the underlying premise that it should be of prime importance to medical practitioners to provide medical care with which people could be materially, emotionally and financially satisfied. A similar argument was still being made twenty years later. In a pamphlet by William Graeme[16] written in 1727 criticizing the physicians, we find the same concern for public acceptability, the same assumption that the practitioner's primary value lay in the extent to which his services proved effective, and the same conceptulization of the compatibility of utility, economy and moral virtue. Physicians would "acquire more Honour, and do more Good", he wrote, if they lowered their fees.[17] Men would then call them in more readily and for "the least Disorder . . . /and/ by this Means they would have it in their Power, to observe Diseases from their first Appearance, and by putting the Patient, from the Beginning, under a right Management, would, very often, effectually make a

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[16] /Wm. Graeme/ Essay for Reforming the Modern Way of Practising Medicine in Edinburgh, Edin. 1727. Graeme was a master of the Incorporation of Surgeon-Apothecaries and a licentiate of the College of Physicians of Edinburgh. He had obtained an M.D. from St. Andrews in 1724.

[17] Ibid. p. 8.

Cure."[18]

High fees were, according to Graeme, directly related to the low status he believed physicians' enjoyed. By keeping their fees high, physicians excluded themselves from the possibility of ministering to the more commonplace consequences of human misfortunes and frailties; as a result, they could not understand the nature of disease or how to treat it. Physicians were seldom called, he argued, "except perhaps by the richer Sort, and that not always", until a man was near death, by which time the physician could "neither understand nor cure the disease."[19] If they were more familiar with the patient in a state of health, i.e. in his natural state, the question of how to treat his illnesses would be easier to determine. "It is a certain fact", he wrote,

> that Physicians, being commonly called in the End of a Disease, or after it has made a considerable Progress, seldom see any one, as God and Nature sent it; but as it is disguised and changed by Applications made in the Beginning: And for this Reason they are able to do their Patients little or No Service, which has render'd the Art contemptible to some, and suspected to be no great Use, even by the most knowing.[20]

The interpretation of such expressions of humanity and moral righteousness is always difficult. The petition, certainly, was self-serving. Throwing themselves at the

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[18] Ibid.

[19] Ibid. pp.8-9.

[20] Ibid.

mercy of popular judgement, the surgeon-apothecaries were confident the public would invariably turn to them for medical service. As we have seen, they had already legally engrossed pharmacy, and whether legally or not by the turn of the eighteenth century they had also appropriated the role of the physician. In spite of the failure of the 1707 Bill, surgeon-apothecaries who chose not, for whatever reason, to take an M.D. were, according to William Eccles, including a fee for advice along with their bill for drugs and medications.[21] The fact that James Brown's bill to the Chieslie's[22] was presented in open court did not prevent him including £20 scots for "pains, advice and attendance".[23] An apprentice to John McGill claimed in the early 1730's that he learned from his master "more of the Practice of Physic than Chyrurgery . . . ."[24]

The surgeon-apothecary John McGill, it will be recalled, had been appointed Professor of Anatomy in 1716,[25] was one of the surgeon-apothecaries who had dissociated

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[21] Wm. Eccles Historical Account . . . op. cit. 1707, pp. 4 & 27.

[22] See page 95.

[23] S.R.O. GD/5/347.

[24] Archives - R.C.P.E. "Papers of Dr. John Boswall", p. 16. For more information on Boswall, see

[25] See pages 111 and 127.

himself from the collectivity of surgeon-apothecaries in the conflict over the burgh elections in the early 1720's,[26] was one of the six original surgeons to the Infirmary,[27] and was one of the original members of the Medical Society formed by Alexander Monro in the early 1730's.[28] He was, therefore, politically powerful and a successful surgeon-apothecary. This does not, of course, make him typical, and his self-imposed ostracism from the political collectivity of the Incorporation is indicative of the divergence within the surgeon-apothecaries. Information about John McGill obviously gives us some guidelines with which to work, however. We do not have sufficient information to provide a definitive picture of John McGill's work,[29] but drawing in addition from another source we can get some idea of what a prominent surgeon-apothecary could offer his apprentice.

The kind of work an apprentice could expect to find in a surgeon-apothecary's shop is outlined in a set of rules drawn up by Dr. Adam Austin, surgeon-apothecary who entered the Incorporation in 1749.[30] Austin ran a

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[26] See page 119.

[27] See page 153.

[28] See page 237.

[29] From 1710 when he entered the Incorporation until his death in 1736, twenty-one apprentices and servants came under McGill's charge.

[30] Archives - R.C.P.E. "Rules to be observed by Apprentices in shop" appended to Mss. Notes of Clinical Lectures of John Rutherford given in the Royal Infirmary 1769.

practice in partnership with a Mr. Smyth, and his rules show that dispensing and selling medicines, entering prescriptions into a ledger and attendance on at least some of the patients was entirely in the hands of four apprentices and servants. The youngest was assigned to the more menial tasks--sweeping floors--while the senior apprentice took care of the patients. Austin had an extensive library which was catalogued in the Rule Book, and from it we see that Austin was well abreast of philosophical debate in Edinburgh; David Hume's Essays, published in London in 1753, was in Austin's library in 1754.

Returning now to John McGill, we know from records of his apprentice John Boswall that the latter lived with his master for three years.[31] Boswall was McGill's only apprentice at that time, "by which means", he wrote, "I very soon gott the charge of all. In less than 4 weeks I did all his business."[32] Boswall referred to McGill as "one of the best practical surgeons in Edinburgh", but his subsequent description of McGill's practice demonstrates why the term "general practitioner" conveys more accurately to the modern ear the nature of the surgeon-apothecary's practice. McGill performed some operations, "such as the extirpation of Cancers, Lithotomy, both the higher and lower way", but generally Boswall "learnt much more of the

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[31] "Papers of Dr. John Boswall" op. cit. p. 16.

[32] Ibid.

Practise of Physic than Chyrurgery . . . ."[33] He saw, he said, a great deal of the best practice in town, because McGill had the "best Patients", and while "a good number of them imploy'd the best Physitians . . . for others Mr. McGill serv'd himself, who was as good almost as any of them, for he had long practised and had consulted with the best Physicians and was along with this a man of great Judgement."[34] It would appear that John McGill took an interest in his apprentice's social, as well as professional, development; "I bless God for it", wrote Boswall, "I was never either Drunk or in a bady /sic/ house the whole time I was with Mr. McGill."[35]

Strict moral behaviour, as is well known, was fundamental to Scottish Calvinism. We know that Alexander Monro, too, had been raised in a kindly but rigorously virtuous atmosphere. We do not know to what extent a strict moral code permeated the collective psyche of the Incorporation of Surgeon-Apothecaries, although it does appear that at the turn of the eighteenth century it was attempting to curb excessive drinking when conducting its corporate affairs, at the same time that it was encouraging educational improvement. It should also be noted that insofar as the surviving records show, the Scottish ministry

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[33] Ibid.

[34] Ibid.

[35] Ibid.

entrusted a significant number of its sons to the tutelage of the surgeon-apothecaries.[36] For these reasons it is worth considering an aspect of medical thought which owed as much to religious as to medical ideas.

In a recent study investigating the application of the Weber thesis to Scotland to test the growth of a "spirit of capitalism" out of Calvinist theological tenets and practices, Gordon Marshall has shown the great extent to which seventeenth century Scottish Calvinist divines encouraged an extremely demanding behavioural code from their congregations.[37] They advocated "a pattern of behaviour", Marshall writes,

> (this-wordly asceticism, constructive utilization of one's time, diligence in lawful calling) and specified a psychological sanction (the idea of proof) whereby the believer was required, as a prerequisite for the comforting self-conviction that his or her salvation was secured, to adhere strictly to the prescribed code of conduct.[38]

Marshall's purpose was to discover these characteristics being displayed in economic activity, and he has had some success in isolating some cases where such behaviour did appear to direct economic activity.[39] One of the men

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[36] See Appendices VI and VII.

[37] G. Marshall Presbyteries and Profits. Calvinism and the Development of Capitalism in Scotland 1560-1707. Oxford 1980. See chapter 4 "Seventeenth Century Scottish Calvinism", pp. 65-112.

[38] Ibid. p. 221.

[39] Ibid. chapter 7 "The Newmills Cloth Manufactory, Haddingtonshire", pp. 140-207 and pp. 226-247.

Marshall singles out is Sir John Clerk of Penicuik, who ran his colliery at Loanhead on very strict principles of the economic use of time and manpower. What Marshall does not bring out, however, is the interrelationship between religious and medical ideas which accompanied Clerk's strict code of behaviour. Sir John was, as we have already noted,[40] very close to the medical community in Edinburgh, where he commanded considerable respect, by virtue of his social position and his knowledge of medicine. His interest in medical remedies, however, went beyond the demands of practical necessity. In searching for answers to questions regarding the human condition, Clerk found spiritual solace in analysing the function and operation of his own body. He found answers by making material analogies to explain his own continuing existence; life was sustained by external agencies which provided it with essential supports. ". . . [o]ur body is like a lamp", he wrote,

> to which the natural heat is instead of fire, and the radical moisture instead of oyl, take away the oyl and the flame soon goes out or exclude air and then both the flame and heat will quickly cease.[41]

From such premises we find Sir John examining his own bodily state in great detail, and finding medical justification for the moral virtues of extreme asceticism. Before 1700 all the remedies Clerk noted in his journal

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[40] See page 97.

[41] S.R.O. GD/18/2137.

were curative, the specific herb or prescription being indicated in terms of the location of the disease.[42] In subsequent years, while entries of particular remedies continued, Clerk began to take a different approach to illness. He began to look not only for cures, but also for the physical manifestations of health and the means by which he could maintain it by his own efforts. For example, in 1709 he entered in his journal "Essay anent Pulses by Floyr",[43] taking note that "A Moderate strength" was observable in the most natural and healthy pulses, and that the common causes of "vehement pulse" were hot air, hot diet, youth, anger, hot baths, watchings." There followed a discussion of different human temperaments, and the information noted that the rate of pulse varied at different times of day, under different conditions, for different sexes and at different ages. The best methods of achieving a moderate pulse, Clerk concluded, were by fasting, by cold or tepid bathing, and by the regulation of meat eating.

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[42]S.R.O. GD/18/2130 "Mss. book of medical recipes . . ." op. cit.

[43]Ibid. Sir John Floyer (1649-1734). A Lichfield physician enquiring into sensible reactions to substances. His books include The Touchstones of Medicine, discovering the vertues of vegetables, minerals and animals by their taste & smells Lond. 1687; The Preternatural State of Animal Humours Described by their Sensible Qualities . . . Lond. 1696; An Essay to Prove Cold Bathing both Safe and Useful . . . Lond. 1702; The Physician's Pulse Watch; or an essay to explain the old art of feeling the the Pulse . . . Lond. 1707-10. His work on cold bathing was still in print in 1844.

Clerk's interest in such questions stemmed from his concern for personal salvation, and it is clear that by 1710 temperance, in its widest sense, had become for him the secular manifestation of sanctification. Man's happiness, he wrote, consisted in the state of innocence in his union with God. By sin man had broken that link, and he could be reunited with God only "by religion, which is the cement which doth again unite and tye God to man, by his reconsiliation [sic] to man threw [the cross] and which doth tye man firmly to God again by sanctification and to his neighbours by charitie and to himself by temperance and by an earnest desire and concerned [--] for salvation threw [the cross] his might and strength his wisdom and reason."[44]

These religious reflections by Clerk were part of a much more extensive extract from a work, the author of which is not given, which was a religio-medical exercise largely devoted to an extensive examination of the justification, means and virtues of fasting. Clerk's extracts, entered in 1710, contained a long "Prelude" demonstrating, from Old Testament sources, that God had, through Moses, taken care "not only of the estates and lives but also of the health of his people."[45] He had done this by rejecting regular medical remedies--he had "rendered medicine to be

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[44] S.R.O. GD/18/2137.

[45] Ibid.

of little use"--but by laying down dietetic laws; "Yea the Lord himself became ther physician."[46]

The unknown author had some medical background; he argued the whole case for fasting on the premise that disease was largely the result of the accumulation of "bad humours" in the body. He did not accept, however, that physick could to any appreciable extent change the "bad humours" to good. "It is vain to expect and hope for the recovery of health by alteratives, for bad humours can be no more altered and reduced to ther primitive excellence and order, than curds and whey can be reduced again to good sweat milk."[47] The writer believed that the bad humours, once accumulated, had to be purged from the body; "health can be no other way recovered than by evacuation, either by a natural crisis or by art."[48] Purging should take place as quickly and as severely as possible "befor it be too late, stronger and severer means [if lesser] are insufficient. Although he does not say so explicitely, the anonymous author obviously saw this purging as a physical form of atonement. "It is a vain thing," he wrote, "to expect to be freed from any disease without labour and pain."[49]

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[46] Ibid.

[47] Ibid.

[48] Ibid.

[49] Ibid.

By far the better way of fighting disease, however, was for men to live godly lives, thus preventing sin and sickness, and to exercise a measure of self-denial which, he argued, was both medically and morally beneficial. "The wages of sin is sickness, and the consequence of sickness is death", he wrote.[50] "If sin be the cause of all our disease, therefore it will follow that if we would be chearful, healthful, strong, agile and [easie ?] we must live temperately."[51] As a supplement to temperate living man must also labour, otherwise even the most temperate of men would find "bad humours" accumulating in his body. With temperate labour, the natural evacuations of the body would function to dispel the accumulated morbid matter, usually without any aid from "physick", although the writer did not rule out completely the use of remedies;

> . . . if blitheness and exercise be joynd with fasting . . . for nature in Robust bodies is able by its own ferment and power of separating and secreting the offending morbid matter, To recover itself from almost all diseases, the plague itself, fevers and dysenteries not excepted, without any Remedie, and others whereby easy and soft ways of living have debilitated their strength, providence has collected [many ?] medicines in its great magazine, which are now by human industry brought together in the storehouse of physick for the recovering at a very cheap rate.[52]

In that fight for good health which Clerk's author

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[50] Ibid.

[51] Ibid.

[52] Ibid.

made synonymous with righteousness, nature was at one and the same time man's greatest ally and greatest enemy. He had argued that the measure of man's successful achievement of righteousness was the extent to which he was adapted to the environment in which he lived. But that adaption was not preordained; man was not a passive agent. In assessing the effectiveness of fasting, the qualities of man's own nature were discussed along with that of the environment in which he lived. "The diversity of tempers, seasons, countries, exercise, food, custom and disposition of health and their organs, make a notable difference in the matter of fasting",[53] he wrote, and continued by making a lengthy catalogue of different regions, climates and diet, of different temperaments and, most importantly, the prescriptive power of custom, in order to discover conditions most conducive to fasting. The writer was aware of the importance of early tutelage in creating the required habits. "Children can't be taught abstinence in their infancy," he wrote, "because they are no more capable of a habit, than they are of discipline, however they may be used from the breast to less meat than ordinarily is allowed, never excited to eat much, and habituat [to] drinking water."[54]

Sir John's practices were extreme, but his opinions were not unique. It was a religious piety incorporating a

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[53] Ibid.

[54] Ibid.

humoral pathology and the doctrine of the non-naturals.[55] We can see similar ideas in the writing of another Scotsman in the early eighteenth century, Dr. George Cheyne.[56] Cheyne had been a strong advocate of Pitcairne's iatro-mathematical theories in his youth in Edinburgh,[57] but by the 1720's he had become disenchanted with them. He still clung to modified mechanistic remedies--advocating modifications, weanings and strengthenings of the fluids--but he admitted the ineffectiveness of hydro-dynamic theories in combatting illness.[58] In their place we see Cheyne, like Sir John Clerk, looking towards temperance, moderation and the dictates of nature for relief from ill-health. He argued strongly for a "regimen of diet" which "has the greatest Influence . . . without which, the best and surest Remedies fail."[59] He was convinced, he continued, that

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[55] See L.J. Rather "The six things non-natural: a note on the origins of a doctrine and a phrase" Clio Medica 3 (1968) pp. 337-347.

[56] George Cheyne M.D. (1671-1743). Born in Aberdeenshire, of a family related to Bishop Burnet. Intended for the ministry, but pursuaded by Pitcairne to study medicine instead. F.R.S. 1702 after publishing a defence of Pitcairne's iatro-mathematical theories entitled A New Theory of Fevers. Lived from 1702 in London, where he became an eminent medical practitioner.

[57] See T.M. Brown "The Mechanical Philosophy . . ." op. cit. 1968, pp. 250-253.

[58] George Cheyne The English Malady Lond. 1733, pp. 51-52.

[59] Ibid.

"the diet and manner of living of the middling Rank who are but moderate and temperate in Foods of the common and natural Product of the Country . . . is that intended by the Author of Nature for this Climate and Country."[60] In 1724 he wrote An Essay on Health and Long Life which placed great emphasis upon the need to take environmental factors, particularly diet, into account in analysing the causes of disease, and was principally an invocation against gluttony. It had run into seven editions in two years, but was not received enthusiastically by his colleagues in London who, he claimed, had "proclaimed everywhere that I was turned mere Enthusiast, and resolv'd all Things into Allegory and Analogy, advis'd People to turn Monks, to run into Desarts, and to live on Roots, Herbs and Wild Fruits; in fine that I was at Bottom a mere Leveller, and for destroying Order, Ranks and Property, everyone's but my own."[61]

Perhaps we should look no further than the fact that by the 1730's Cheyne weighed thirty-two stone[62] to understand

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[60] Ibid.

[61] Ibid. Cheyne's other book on these themes was Essay on Regimen 1740. The professional condemnation was not a reflection of general public opinion. Johnson, Fielding and Richardson all had the greatest respect for Cheyne, and it has been suggested he was the physician Hume consulted in 1734. John Wesley's Primitive Physick was chiefly transcribed from Cheyne's work. See C.F. Mullett The Letters of Dr. George Cheyne to the Countess of Huntingdon San Marino, Calif. 1950, and J.M. Bulloch An Aberdeen Falstaff Aberdeen 1930.

[62] Dictionary of National Biography Vol. IV, pp. 207-209.

his conversion to the virtues of moderation and abstemious living. Two important points should be borne in mind, however. In the first place, it was not a conversion, but a reversion to the habits of his youth, when he was "accustomed to sedentary and temperate habits".[63] In the second place, his medical philosophy was couched in a religious framework, and he made an analogy between the purification of the soul and the cure of disease which suggest the same kind of secularization of religious imperatives in a medical context which Clerk found so satisfying. "Sin, Disorder and Rebellion", he wrote, "is to the spiritual Nature of an intelligent Being, precisely and really . . . what a cancerous and malignant Ulcer is to an animal Body. The Cure of the last is by a low, sweatning and thinning Dyet . . . ; Penitence, Self-Denial, calm Passions, a meak Spirit, and a constant patient Attendance to, and Dependence on, the Directions of the Physician of Souls, will answer the first part."[64]

Sir John Clerk was, apparently, a well-known ascetic. His doctor, Dr. Alexander Penicuik, remarked that he had no need to recommend exercise and sobriety to his patient,

> since your moderation and abstinence is so well known that few Scotsmen can come your length of abstinence if it were to save their lives.[65]

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[63] Ibid.

[64] George Cheyne Essay on Regimen Lond. 1740, pp. 316-18.

[65] S.R.O. GD/18/5303 Dr. Alexander Pennicook to Sir John Clerk, Sept. 26, 1717.

However, it is not improbable that amongst devout, educated Scotsmen, and particularly amongst medical men, the intellectual steps leading from religious virtue, to abstemious living, and then to physical health were not difficult to recognize. Moreover, Sir John's social influence would not have been inconsiderable. Penicuik himself makes some such genuflection, giving credit for his own recovery from gout to the example the old laird had set in abstemious living, "especially any luxury in dyet."[66] Even without the doctrinal imperative, men who had lived through the extreme hardship of the 1690's would have learned the necessity of lean living, and one does not have to have a profound insight into human character to recognize the attraction for a proud people of making a virtue out of necessity.

II

What I am suggesting, therefore, is that it would not be surprising to find the medical virtues of abstemious living and moderate conduct finding currency amongst those thoughtful and pious Scots who were conscientious in their devotion to the teachings of the Kirk. Sir John Clerk's diary shows what extreme piety in early eighteenth century Scotland could mean. Moreover, it reminds us of the implications such a doctrine could have for questions of health and disease, particularly where, as in Edinburgh,

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[66] S.R.O. GD/18/5307/3 Dr. Alexander Pennicook to Sir John Clerk, June, 1719.

there was a medical corporation structurally expansive--there is no doubt it was educating far more apprentices than could expect to find employment in Edinburgh--and which exerted little institutional control over its members' professional activities.

An example of what such an open policy on medical activity could produce is the Bagnio which the Incorporation included when erecting its new Hall at the turn of the eighteenth century.[67] Immersion in water of any temperature in the seventeenth century was not considered a self-evident virtue; cleanliness was not considered next to godliness, and as a form of recreation was associated mainly with the young and the poor.[68] The Bagnio erected by the Incorporation was intended as a form of medical therapy[69] which appears to have had some vogue at the turn of the eighteenth century.[70] The promotion of cold water bathing became one

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[67] Surgs. Mins. Oct. 28, 1697; Archives - R.C.S.E. Bundle 93, which contains accounts for 800 marble slabs for the Bagnio.

[68] See R. Lennard "The Watering Places" in R. Lennard (ed.) Englishmen at Rest and Play. Some phases of English Leisure 1558-1714 Oxford 1931, pp. 67-78.

[69] The Traditions of Edinburgh Chronologically Arranged or Annals of Edinburgh 626-1707 Edin. 1848. "Sweat Baths" were also to be found in Edinburgh at this time. See A.N.C. Hallen (ed.) The Account Book of Sir John Foulis of Ravelston 1671-1707 S.H.S. Vol.16, Edin. 1894.

[70] R. Lennard "The Watering Places" op. cit. 1931, passim. and Appendix I "The Multiplication of Spas in the Second Half of the Seventeenth Century" pp. 235-239. Sir John Floyer was a keen advocate of cold water bathing. See An Enquiry into

of Sir John Clerk's preoccupations in the early eighteenth century.[71]

It could well be that Sir John Clerk acquired his interest in cold water bathing, and even his entire ascetic regimen, from experiences at a mineral Spa.[72] Medical therapy at the Spas had always included a large component of advice on the kind of regimen which should accompany drinking the waters. "After dinner", visitors to Knaresborough in 1626 were advised,

> they ought to use no violent exercise, neither ought they to sit still, sadly, heavy, and musing nor to slumber, and sleepe; but rather to stirre a little, and to raise up the spirits for an houre or two, by some fit recreation. After supper they may take a walke into the fields, or Castle yard.[73]

It is true that by the end of the seventeenth century the most famous English Spas--notably Bath and Tunbridge Wells--had reputations more associated with licentiousness than asceticism,[74] but this was not true of all the Spas.

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the Right Use and Abuses of the Hot, Cold, & Temperate Baths in England Lond. 1697; An Essay to Prove Cold Bathing both Safe and Useful Lond. 1702; Medicina Gerocomica or the Galenic Art of Preserving Old Men's Health Lond. 1714.

[71]S.R.O. GD/18/5269/16-17.

[72]It could also have been through acquaintance with other (see above) works of Sir John Floyer.

[73]R. Lennard "The Watering Places" op. cit. 1931, p. 15.

[74]Ibid. pp. 50-60.

Scarborough, apparently, a Spa where "[m]ost of the Gentry of the North of England and Scotland resort . . . in the Season of the year", according to Joseph Taylor in A Journey to Edenborough in 1705, was far from riotous. The town had a large community of Quakers, who apparently owned virtually all public accommodation there, and presumably thus influenced the style of accommodation; in any event "all the diversion is ye walking on this sand twice a day at ye Ebb of the tide and till its high tide and then they drink."[75]

The cult of "taking the waters", i.e. drinking and/or bathing in mineral waters, was a therapy designed not for acute, contagious diseases such as smallpox, measles, plague, scarlet fever; diseases relatively easily identified, often mortal and completely unresponsive to contemporary treatment. It was a therapy designed for more chronic complaints; the blind and the lame of religious heritage, but also constituting those suffering from the lingering aches, pains, itchings, scalings and endless discomforts with which men, women and children in the past must have been constantly plagued. Moreover, it was a remedy designed to alleviate the mind as much as the body, a therapy of action less distasteful than the "nauseous draught". Finally, it was a remedy which probably appeared to work. As it has been remarked, ". . .the effects . . . of

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[75] Ibid. p. 46.

cleanliness, or of the fillip to the nerves given by immersion in cold water must often have been taken as signs of the medicinal qualities of particular springs."[76]

Chronic illness and anxiety of mind were, as we shall see, the more prevalent, nagging kind of minor ailments with which surgeon-apothecaries claimed to have greater experience. When they spoke of "⌈t⌋he great Varieties of the Dispositions of Persons and the Accidents that may befal them in the Matter of their Health . . ." they were speaking to a different order of medical problem from that which they argued the physician was most familiar. Although lines between the two have always been blurred, and medical practitioners have always, to some extent, addressed both issues, the preservation of health is not the same as the cure of disease. Whether specifically aware of it or not, the Incorporation of Surgeon-apothecaries was addressing the former of these two functions of the medical practitioner when it lobbied parliament in 1707.

Therapy involving the use of water also had the virtue of needing no particular technical expertise; it was popular physick both in the sense of being inexpensive and non-technical. Water therapies constituted a large proportion of the medical advice in John Wesley's Primitive Physick (1746), and were intended to make the medical practitioner superfluous in cases of non-critical illness.

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[76] Ibid. p. 33.

This, obviously, was not the intention of the surgeon-apothecaries. Although opinion on the relative virtues of remedies could pass between gentleman layman and medical practitioner with ease, surgeon-apothecaries did not encourage men to be their own physician, although as we shall see, they were often in no position to argue otherwise. Rather, I would wish to argue that surgeon-apothecaries were ready to accept, and incorporate, responsible lay opinion into their own medical opinions and therapies.

Cold water bathing appeared to become a popular therapy in Edinburgh in the early eighteenth century. In addition to the Incorporation's Bagnio, we find Dr. John Clerk, son of the surgeon-apothecary Robert Clerk and nephew of Sir John, consulting his uncle over medical treatment and taking the old man's advice on the benefits of the cold bath.[77] The College of Physicians opened its own cold bath house in 1712, which in 1720 we find leased out to a surgeon-apothecary.[78] A cold bath was, apparently, also used as a form of therapy at a mineral Spa at Cornhill,[79] to which a surgeon-apothecary in Dalkeith was sending patients in the early 1730's.[80]

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[77] S.R.O. GD/18/5298.

[78] Phys. Mins. Dec. 4, 1712, Aug. 3, 1714, Feb. 7, 1716, Oct. 2, 1719, Feb. 2, 1720.

[79] The location of this Spa has not been established conclusively. Possibly, it is near the border of Scotland and England, on the river Tweed.

[80] N.L.S. Mss. 3774, "Case book of an anonymous surgeon-apothecary" c.1732-35.

This man has left a large folio of notes on his medical practice, against which many of the generalizations we have made about general practice in Edinburgh can be weighed.[81] He represents perfectly the general practitioner I have proposed. He gives every impression that he was a surgeon-apothecary;[82] he dispensed his own drugs and medicaments; he had an extremely extensive practice and provided, in cases of acute illness, continual attendance. Perhaps most importantly, he worked with physicians but not as an equal; when a physician was called in, the man in Dalkeith recorded instructions and faithfully fulfilled them. At the same time, however, he identified with physicians in a general way. "It is certainly a wrong thing in a physician to have any sort of regard to what people say", he recorded at one point,[83] "and often leads us [my emphasis] into wrong practice".

Although he lived outside Edinburgh, the Dalkeith practitioner moved freely within the Edinburgh medical community, making frequent visits to the city and working in collaboration with many Edinburgh physicians. He was

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[81] The case-book has been explored by C.G. Drummond in "An Anonymous Apothecary" The Chemist and Druggist (1958) pp. 692-696.

[82] Mr. Drummond makes this assumption too.

[83] "Case-book of an anonymous surgeon-apothecary" op. cit. c.1732-35, p. 105.

not a contentious man; he worked amicably and conscientiously with a great number of Edinburgh physicians, carefully recording prescriptions and instructions for individual patients. At the same time, he never hesitated to prescribe his own medicines and treatments of an "internal" nature, i.e. purges, vomits, diuretics, which physicians had claimed as their particular area of expertise.[84] There is no sense that he felt any particular professional conflict with physicians by such practice. One visit would find him prescribing his own vomit or purge; another would record the medicine ordered by Dr. Stevenson, or Dr. Sinclair, or Dr. Clerk.[85] He was extremely well-read; his case notes are sprinkled with observations of others, notably Sydenham.

His case notes are most notable, however, for their comprehension. He recorded with meticulous detail all the information he could gather on the circumstances leading up to the onset of the particular disease, information gathered from his own and the knowledge given him by patients, and including personal as well as physiological data. The Master of Garless, for example, was "a boy of lively spirit and delicate complexion by the mother's side";[86] whereas a

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[84] See pages 251-52.

[85] All physicians practicing in Edinburgh. I have not been able to identify any particular code of behaviour between the Dalkeith practitioner and these physicians, i.e. did he work with particular physicians, or with them all randomly; did he call in the physician, or did the patient?

[86] "Case-book of an anonymous surgeon-apothecary" op. cit. c.1732-35, p. 172.

Mr. Dunlop was "a man of a lazy, indolent life much addicted to fuddling himself frequently with spirits of a gross corpulent habit and blanch'd dull complexion."[87] His observations could also include a notation of the weather, particularly in the case of coughs and "pleuritick" distempers.[88] His case notes also provide information on popular views of illness, as when he recorded, without any editorial comment, the opinion of Mark Umpherston, a wright, that his "troubles had first arose from crosses and misfortunes in the world."[89] A typical preliminary case survey[90] is the one relating to George Brunton, a butcher in Dalkeith, suffering from a dropsy. "A man of middle age", he wrote,

> & thin habit had never been very much addicted to drinking, but had frequently used immoderate exercise in the course of his business & cold draughts of drink after he had been very warm. he fell ill sometime in the beginning of October and had then a little swelling in his legs but such as he was able to go about with for some time. soon after he was confined to his room, was much troubled besides with a pain in his right side /and/ a cough especially in the night time & want of sleep and frequently a

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[87] Ibid. p. 158.

[88] See case of "Mrs. Buchanan's servant maid", ibid. p. 131.

[89] Ibid. p. 231. See also "the case of My Lady Dalhousie" who attributed the cause of all her problems to the use of opiates (p. 202), and "the case of the woman at New Mills" who believed the obstruction of her menstrual flow arose from the time "she gave herself cold in the feet" (p. 154).

[90] One could choose from several; another good example is the case of Mrs. Dunlop, ibid. p. 146.

shortness of breath. also a scarcity of urine . . . ."[91]

Invariably, treatment was designed to evacuate, to release bad humours, usually by purgatives, vomits or bleeding, but also through blistering, the use of diuretics or the inducement of sweating. A purging was only considered satisfactory if it was "copious", which meant upwards of seven or eight times. Before prescribing medications, however, the Dalkeith practitioner would establish what previous medicine and treatment the patient had received, what effect they had had. Then he would undertake an extensive physical examination; pains and swellings were probed with his hands,[92] the pulse was taken frequently, the tongue examined and any other particular discomforts recorded. The case notes are, largely, records of these observations, medicines and treatments prescribed, and subsequent developments.

He was, then, an enormously observant man; he exemplified the kind of attention to detail William Graeme had advised physicians to develop.[93] He was also an

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[91] Ibid. p. 128. Failure to capitalize is consistent throughout.

[92] See the case of George Bruton, ibid. pp. 128-29, and the extensive probing undertaken to discover the extent of a remaining "tumour" in another patient after the initial lump under her arm had been removed, ibid. pp. 187-88.

[93] See pages 170-71.

enormously reflective man. If the case ended in a less than satisfactory manner, he would append notes reviewing the treatment he had given. These reflections show a genuine regard for all his patients, regardless of wealth or station. He could, certainly, reflect long and hard on the treatment he had given George Dundas, a son of Dundas of Arniston who died of smallpox in 1733,[94] but he was equally likely to be found musing over the treatment he had given, for example, to John Allen, a cook in the household of the Marquess of Tweeddale, who suffered an apoplexy.[95] Perhaps I ought to have given another kind of purgative, he thought; "perhaps also a plentiful bleeding att the Jugular might have made a quicker Revulsion from his head than any other after the bleeding in the Arms."[96]

He recognized the virtues of accumulating information on diseases which were demonstrably similar, or which he perceived to be similar.[97] We find him identifying an outbreak of scarlet fever in October 1733 amongst a number

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[94] "Case-book of an anonymous surgeon-apothecary" op. cit. c.1732-35, pp. 126-27.

[95] Ibid. p. 120.

[96] Ibid.

[97] As we shall see in the following chapter, identification of disease was the object of revision in the method of record-keeping in the Royal Infirmary in the early 1740's. See also the article by Dr. Drummond in Medical Essays vol.I pp. 258-272 also calling for the more accurate identification of diseases.

of patients.[98] In this regard his most concerted efforts were directed to the collection of case histories of smallpox. He recorded at least a dozen, most of which were his own patients,[99] but some not. On February 21, 1734, he recorded "I saw accidentally a young girl of 8 years att New-Mills near Dalkeith lying in the smallpox of whom I got the following history . . . ."[100] His purpose in collecting the histories was to compare treatments, to determine the precise timing and intensity of bleedings, purgings, etc., in order to create bodily conditions most conducive to the safe passage of the disease. "I am very much convinc'd of Dr. Friend's [sic] opinion", he wrote in the midst of the smallpox epidemic,

> that bleeding is extremely requisite in the beginning of the Sm.pox, Rash, fever & Measles when the symptoms especially of a considerable pain in the head, stomach, breast or back seem naturally to demand it. it seems also very reasonable to imagine that seasonable bleeding and vomiting in the beginning of these diseases do very much prevent afterwards any grievous symptoms such as Delirium, Phrenitis, a violent secondary fever, great suppuration, vomiturition or Diarrhea, it seems also certain that a cooling regimen bathing of the feet and above all frequent lifting out of bed and sitting up with a moderate degree of fire in the room are more effectual and vastly preferable to frequent bleeding, for curing a Coma, beginning delirium and above all for causing an easy eruption and

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[98] "Case-book of an anonymous surgeon-apothecary" op. cit. c.1732-35, pp. 98-99.

[99] He tells us there is an outbreak, ibid. p. 149.

[100] Ibid. p. 163.

> not confluent on the face which is the main point to be aim'd at in the first stage of this disease.[101]

The relationship between this practitioner and his patients was very much as Jewson has outlined doctor-patient relationships in eighteenth century England.[102] Remedies were prescribed, to be taken at the pleasure of the patient; bleeding, cupping and blistering were as likely to be done by a servant as by the practitioner.[103] The privilege of the patient to dictate therapy extended to the young--Dr. Cochran did not come out to see the young Dalziel but sent a prescription "in case he lik'd it"[104]--and to the poor, such as the unnamed "woman at New Mills", suffering from "obstruction".[105] He prescribed for her the opiate Pilula Mathei and various purging medicines, and recorded,

> she seem'd very well pleased with the effects of the Pacifick pills but loath'd all the rest so much that afterwards when I saw her she seem'd resolved to use no more medicine unless these pills which accordingly I order'd her in about 6 or 7 doses to be taken att bedtime . . .[106]

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[101] Ibid. pp. 136-37.

[102] N. Jewson "Medical Knowledge and the Patronage System in Eighteenth Century England" Sociology VIII (1974) pp. 369-85.

[103] See the cases of Lord and Lady Dalhousie, pp. 184, 202-03, 220, 240, 243 and 264.

[104] Ibid. p. 133.

[105] Ibid. p. 154-55.

[106] Ibid.

Much of the practitioner's work, therefore, was dictated by his patients. This obviously rendered his practice even more precarious than it might in any event have been. He attended patients with diseases of whose causes he had no precise knowledge; his diagnoses, therefore, were based upon an arbitrary amalgam of causes and symptoms.[107] His therapies, therefore, were administered on an ad hoc basis, designed essentially to counter or alleviate symptoms as they developed. Finally, treatment was subject to the intervention of the patient, responding to the immediate effects of particular treatments. His work must, therefore, have involved endless frustration; he was extending his powers of observation to the utmost whereas his powers of action were extremely limited.

The man did not confine himself entirely to empirical observations, however. He did carry with him general propositions concerning the nature of human health and disease, and here again we see conclusions being made which placed emphasis upon an ascetic lifestyle. He based his conclusions upon physiological premises,[108] although these

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[107] See the case of Mrs. Dunlop, ibid. pp. 140, 146 and 185, suffering from a "nose bleed", from which she eventually died, for a good example of the chaos of knowledge from which diagnoses had to be made.

[108] To be found in his discussion of "Animal Heat", ibid. pp. 252-54.

premises contained nothing of moment. They incorporated standard current mechanistic and chemical ideas and revolved around the desire to understand the constitution of the blood and the need to keep the "Animal Heat", which was largely governed by the state of the red globules, at an even, moderate temperature. The blood became overheated, and easily putrified, by violent intestinal motions caused by either mechanical or chemical processes. "Animal Heat", he wrote,

> is partly to be accounted for from Mechanical principles but cheifly [sic] from the Chemical and sulphureous parts of the blood putt into a violent motion by the Attrition and partly also perhaps by an intestin motion which however we are not able to perceive or demonstrate to the Eye.[109]

In any illness where a fever either existed or was expected, therefore, one of the most important considerations was to prevent the blood from becoming overheated. To ensure this his most consistent treatment was to forbid his patients from eating meat. "Vegetable food and milk", he wrote,

> with farinaeous seeds, roots and herbs are found not to heat the body near so much as the flesh of animals and especially the carnivorous kind of birds which are therefore as much forbidden in a Fever, an Hectick or such like state of the

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[109] Ibid. p. 252. T.M. Brown sees a similar lack of relationship between theory and therapy in the adoption of iatro-mechanism by the College of Physicians of London, although in this case iatro-mechanism was used to "account for the efficacy of the old and familiar therapeutic recommendations such as blood-letting, purging,and vomiting." T.M. Brown "The College of Physicians and the Acceptance of Iatromechanism . . ." op. cit. 1970, p. 22.

body as Wine and Spiritous liquors . . . .[110]

From these physiological premises he speculated on larger themes; what effect, for example, such a diet had on the human life span. ". . . /M/ay not this be a natural reason", he asked himself, "why those people that live entirely on flesh are shorter lived than those who mix along with it a vegetable diet viz. because too much heat and motion must naturally tend to wear off the solids too fast?"[111] It could also be, he continued, that "those creatures which live on animal food are more fierce and have more irregular passions as Dogs, Hawks, Lions, Eagles, etc. than those which live on Vegetables and that the old Pythagorean dyet has a great effect on the human passions to make them regular."[112]

In this particular context the practitioner was making no observation on the nutritional qualities of different foodstuffs. His whole attention was on the heating or cooling properties of these substances, acquired from chemical processes. Animal food, once ingested, quickly turned alkaline, "that is to say into a fiery hot nature, viz. that of putrefaction for we know from Chemistry that there is no kind of Alkali or any thing approaching to it but what contains a certain degree of heat and therefore

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[110] Ibid. p. 253.

[111] Ibid. p. 252.

[112] Ibid.

alkalis do as much heat the blood as acids cool it . . . ."[113]

We can conclude even more firmly that this practitioner's medical theories bore little relationship to the therapies he employed when we look more closely at his reasons for rejecting animal food. He could arrive at this conclusion from any scientifically conceived proposition, because in cases where a reverse remedy would appear to be in order, i.e. in cases where the blood was low and in need of heat or stimulation,[114] he still found no virtue in animal food. Alkalis, he had said, heat the blood, but act too strongly; he continued this line of argument with the words "and we find that alkalious [sic] Salts are the most proper restoratives in a low languid and depress'd pulse want of natural heat and hysterick disorders . . . ."[115] From this argument he concluded that mineral waters were the most effective means of restoring the heat of the blood, because they acted gently. ". . . [I]t really hapens," he wrote, "that all the Chalybeat waters or a great many of them contain a kind of gentle alkali call'd terra calcaria which is very serviceable in Hypochondriacal disorders and co-operates in restoring the natural heat

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[113] Ibid.

[114] He does not use the word "stimulation".

[115] "Case-book of an anonymous surgeon-apothecary" op. cit. c.1732-35, p. 252.

along with the steel."[116] His knowledge regarding "steel" in the blood appears to have been derived from Sydenham. "[T]hese substances which are most capable of rowsing the Animal Heat", he wrote in another place,

> are such as have strong elasticity of their minute particles hence Sydenham found that the steel in substance is the only proper restorative of a languid and depress'd state of the blood in low Hysteric and Hypochondriack disorders.[117]

Mineral waters thus contained alkalis and steel, the latter "a very elastick metal".[118] Ultimately, these substances affected the solids of the body, but they did so through their action on the blood. "[T]he effect of these elastick substances on the solids of the human body", we learn,

> is to raise a greater and quicker motion or circulation in the blood and by this means to mix the several constituent parts of the blood more intimately together and thus hinder them from separating from one another as they are naturally apt to do by rest.[119]

With the exception of his case notes on smallpox, analysis of the mineral waters in the various Springs in and around Scotland was the practitioner's most extensive field of enquiry. It took three forms. Firstly, through visits or by obtaining bottles of the water, he drank,

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[116] Ibid.

[117] Ibid. p. 253.

[118] Ibid.

[119] Ibid.

bathed in, examined and analysed Scarborough, Moffat, Cornhill, Pitcaithly, Corstorphine and Aberbrothick waters.[120] Secondly, he read what others had written on the subject; he recorded, for example, Hoffman's analysis of the waters of the German Spas.[121] Thirdly, he noted information obtained from patients and from acquaintances he made at the Wells himself.[122]

There was almost no end to the physical ailments amenable to the use of mineral waters. "They cure several spontaneous vommitings [sic] of bile", he recorded, "nervous and hypochondriacal disorders, foulness of the stomach, loss of appetite and digestion, a beginning salt scorbutick . . . they are much frequented by Girles that are cachectick, Hysterick or Obstructed in the menses."[123] Some people went to the waters for the cure of agues, he recorded, "and even for the dropsy, although in the latter

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[120] Ibid. pp. 255-261.

[121] Ibid. p. 256.

[122] See, for example, "The case of Mr. Wilson", ibid. pp. 94-95.

[123] Similar faith in the extensive healing properties of mineral waters were expressed by another surgeon-apothecary George Millegen, in "An Account of the Virtues and Use of the mineral Waters near Moffat, by George Millegen, Surgeon at Moffat" in Medical Essays Vol. I pp. 62-81. See also the following essay (pp. 82-93) by Andrew Plummer, which addresses not the question of the use of mineral waters but their chemical composition. Again, we see the interest expressed by the surgeon-apothecary relating to the benefit the substance had for his patients, not to its intrinsic properties.

case they seem not to agree with."[124] He recorded cases he attended whilst at the Spas himself. "To a gentleman Asthmatick", he wrote,

> with a cough etc. in a seeming consumption with a constant vomiting of his victuals after the time of digestion . . . I gave the pills of Hydrargyrum att night which together with riding made the waters sit on his stomach and he found his breathing easier.[125]

The waters sometimes cured diarrhea, and served to alleviate "several kinds of scurvy".[126]

Scurvy, by which he meant any number of itching, blistering and scaly cutaneous conditions, was one of the more prevalent irritations his patients suffered. If we look at a case where scurvy was diagnosed, we can see again how little relation there was between medical theory and medical practice; technical medical knowledge of the causes of the disease was clearly manipulated to reflect prevailing currents of thought quite unrelated to the particular medical problem. In "the case of Mr. Wilson"[127] scurvy was one of numerous minor ailments this young man suffered. He was, we learn, "a young man of thin complexion and habit of a pretty lively temper and witty enough when in company he liked tho' at other times somewhat morose and

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[124] "Case-book of an anonymous surgeon-apothecary" op. cit. c.1732-35, p. 257.

[125] Ibid.

[126] Ibid.

[127] Ibid. pp. 94-95.

surely and subject to thoughtfulness. . . ."[128] He was apparently unhappy at home; his father wanted him to enter the kirk but he "rather inclining to the business of physick or anything else rather than that which he had been hitherto design'd for . . . ."[129] The boy was living at home "in the country with his father where he had little or no conversation and ty'd up to strict and regular methods of living . . . ."[130] Forced to attend devotions for which he had no inclination, being "rather inclin'd to free thinking in matters of religion", he became extremely depressed and irritable, shunning "all manner of company especially of women", developed a "settled melancholy", a loss of appetite, "a coldness frequently all over his body . . . and besides felt a strong Itchy eruption on his skin of a very unconstant nature . . . ."[131]

Instead of sending the young man back home with a homily on obedience, the practitioner saw and corresponded with him for a considerable time regarding his physical ailments, principally his scorbutic condition. He prescribed purgatives, "Anti-scorbutick juices", "diet

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[128] Ibid. p. 94.

[129] Ibid.

[130] Ibid.

[131] Ibid.

drinks", advised use of the flesh brush, sent him to drink the goat whey in 1732 and then the waters at Pitcaithly in 1733. He believed mineral waters were of particular benefit to sufferers of scurvy. The fact that "scurvys are said to be owing to salt humours"[132] whereas analysis of many mineral waters showed that one of the principal ingredients was salt[133] did not long detain him; "If then it be true in fact that Moffat water or these Chalybeats do contain a large proportion of seasalt & at the same time do really cure several kinds of scurvys", then he concluded that the scurvy's they cured were not caused by salt humours.[134] They were caused by "coagulations of the humours with acids and obstructions",[135] which could have numerous causes, most related to bad diet, such as ". . . foul and ill made Ale where there is no hopps. such is most part of our Scottish ale . . . ."[136] Other culprits

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[132] Ibid. p. 271.

[133] Ibid. and see note 123.

[134] The type of scurvy commonly caused by "salt humours" was, apparently, sea-scurvy, and was said to be cured "most successfully with whey & syrup of Buckthorn or Sal Polychre, and the fructus Herarie Oranges and Limons, etc." ibid. p. 271.

[135] Ibid.

[136] Ibid.

were "fattish broths, want of exercise & cold."[137] He wasn't too happy about oatmeal, "the finer kind of wheat bread" or "too great use of spiritous liquors . . . ."[138] From these opinions he argued "how beneficial the Dyett of the Spaws with broth in the mornings may be to cure these kinds of scurvys as well as the strong exercise they use along with them."[139]

Mineral waters purged the body, and they restored "tired blood".[140] Over and above these benefits, however, their use was identified in the mind of this practitioner with ascetic living; through a spare diet, exercise and moderate, if any, use of alcohol, they provided the necessary antidote to over-indulgence. "It is reckon'd that the best way of drinking the waters", he wrote,

> is riding briskly betwixt each draught as My Lord Chesterfield did att Scarborough and I found myself that after brisk walking in the warm weather and in the mornings after taking broth they occasion'd a sweat however this freeness of perspiration and sweating I found afterwards much hinder'd from drinking punch or claret. After riding in the fornoon's they occasion'd a prodigious appetite for dinner.[141]

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[137] Ibid.

[138] Ibid.

[139] Ibid.

[140] These are my words.

[141] Ibid. p. 257.

The reference to "My Lord Chesterfield" was not unusual. He took every opportunity to record the practices and programmes of others using the Spas for whatever reason.[142] From his jottings we can create a little cameo of life at the Spas for people like himself; men and women sitting around discussing their bodily functions or exchanging information about remedies claimed to have been beneficial for this or that ailment.

"Mr. Elliot told me that he used to have commonly three stools in a day naturally & in drinking the water he had not one. moreover I found that in rainy days when I used little exercise abroad the waters did not pass so well. nor did they seem to pass well if you drank Tea with butter & bread in the morning about ten o'clock."[143]

"Mr. Pringle told me that Dr. Brown of Montague's Regiment order'd him for carrying off an old inflammation of the eye to use a Collynum of Conserve of Roses, Venice Treacle & some thing else . . . ."[144]

"Col. Farqhar told me he found all kinds of warm bathing unsuccessful for a Rheumatism he had in his youth such as Aix Spaw, Bath, Montpellier, etc. yet recover'd

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[142]George Millegen (note 123) tells us the virtues of Moffat waters were discovered by the wife of a local gentleman.

[143]"Case-book of an anonymous surgeon-apothecary" op. cit. c.1732-35, p. 271.

[144]Ibid. p. 273.

by the long continued use of cold bathing . . . ."[145]

Eighteenth century Spas were largely the resort of the rich, where sagging spirits could be revived. "Where the stomach is spoilt with Debauches and drinking", this practitioner observed, "these waters are of considerable service and so likewise the bath waters restore all the drunkarks and gluttons in England."[146] From what we know of this man we can perhaps presume the dry irony with which this observation was made. It is clear that there was another community of Spa-goers with which he associated.[147] For a variety of reasons he found that time spent at a Spa to be the most effective means of alleviating many of the less alarming illnesses with which his patients were plagued. "The great advantage of Mineral waters above all other methods of cure in the common way of physick", he wrote,

> . . . is that one has an opportunity there of sequestrating himself from business & of guarding against all manner of irregular living of rising in the morning early living sparingly and soberly. using exercise with all manner of innocent diversions and above all the company & conversation of others who conspire to encourage them in an uninterrupted use of the waters. add to all these reasons that the waters work'd in a manner more friendly to nature without depressing the

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[145] Ibid.

[146] Ibid. p. 258.

[147] This point is also made by C.G. Drummond "An Anonymous Apothecary" op. cit. 1958.

> spirits but strengthening the solids creating an appetite and have none of them that nauseous taste which allmost all /-/ compositions have.[148]

The case-book of this practitioner in Dalkeith, therefore, enables us to see the broad range of physical and mental problems the public brought to their medical practitioner at this time, and the problems they posed for him. We see most clearly a very active and perceptive man pursuing many of the same issues which were of current concern within the medical community in Edinburgh. The accumulation of case histories, and the comparison of those of like nature, was the goal of the new policy of record keeping introduced into the Royal Infirmary in the early 1740's.[149] Alexander Monro was to make his own survey of smallpox cases at a later date.[150] The composition of mineral waters was of debate in the pages of Medical Essays,[151] scurvy was of perennial interest, particularly amongst naval surgeons;[152] and as we shall see, William Cullen was to build his entire medical theory around ideas which spoke as much

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[148] "Case-book of an unknown surgeon-apothecary" op. cit. c.1732-35, p. 274.

[149] See pages 241-42.

[150] The Works of Alexander Monro, M.D. . . . . Edin. 1781

[151] See note 123.

[152] James Lind, of course, was soon to confirm the importance of a citrus diet in preventing scurvy in A Treatise on the Scurvy (1753) based on experiments conducted in 1746.

to moral as to medical precept.[153]

We can see the intellectual restrictions under which he operated, stemming from the massive barrier of ignorance about the cause and transmission of diseases. We can also see the social restrictions he worked within; if treatment was not to his or her liking, there was nothing the practitioner could do to enforce the treatment he thought most likely to alleviate, control or cure the illness. None of these problems inhibited his zeal; as in the case of William Graeme and in the public statements of the Incorporation of Surgeon-apothecaries, he derived inspiration from his conviction that he was doing good. In the observation already mentioned (page 192) on the need of physicians to ignore patients' opinions, he told himself " o ne ought all ways to pursue their point or general aim & design sturdily (sans être ébranlé) & if one has only in his veins the intention of doing good, why should he be shaken or directed from it by any one's importunity?"[154] He was, of course, also full of self-contradiction; as we have seen, patients' opinions and inclinations influenced his decisions at every turn.

These external influences went beyond the mechanism of individual therapeutic decisions. They permeated at least part of his stock of medical knowledge. He had two

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[153] See chapter VIII.

[154] "Case-book of an unknown surgeon-apothecary" op. cit. c.1732-35, p. 105.

kinds of knowledge he drew upon when treating his patients' illnesses. On the one hand he used his knowledge of drugs, of medications and of the mechanisms of the human body; the "specialized" knowledge acquired by his training and shared with a relatively small group of fellow practitioners. He also used knowledge acquired from other sources, knowledge drawn from his own and the experiences of patients, acquaintances and friends. In drawing upon this knowledge he was drawing on the common stock of the culture of which he was a part. And the common stock of Scottish culture was heavily imbued with moral imperatives. It is, therefore, not surprising to see, both in the case of Sir John Penicuik and this Dalkeith practitioner, justification for moderation in conduct and habits--essentially moral issues--cloaked in a medical guise.

Medical appropriation of religious precepts and practice in the latter part of the seventeenth century was not peculiar to Scotland. As has been noted about the mineral springs, the "tendency for the miracle-working holy wells of medieval England to become the medicinal springs of an age whose faith was in doctors rather than in saints is evident . . . ."[155] Yet I would argue that in Edinburgh medical appropriation of moral principles was particularly

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[155] R. Lennard "The Watering Places" op. cit. 1931, p. 10.

prevalent. The work of the Incorporation of Surgeon-Apothecaries exemplifies this fusion; it had a particular axe to grind regarding its right to practice medicine and it ground it on the stone of the kirk not out of conscious design but because in order to advance politically it knew it must endorse responsible, lay opinion in some areas of medical knowledge.

CHAPTER VI

MEDICAL AND SURGICAL TEACHING IN EDINBURGH IN THE 1730's

> You have advantageous opportunities in this place of studying all parts of Medicine, under the Professors of its different branches in the University; and of seeing the practice of Pharmacy, Surgery, and Physic, with our Surgeon-Apothecaries, and in the Royal Infirmary, where the diseased poor are carefully treated. These, your interest, and I hope your inclinations, will lead you, Gentlemen, so to improve, as that they may become the happy means of your making a considerable figure in your several stations. Whatever assistance is in my power towards such a desirable event, shall be given with the greatest pleasure . . . .[1]

The development of the Edinburgh medical community in general and the Edinburgh Medical School in particular was the product of a more general movement of renewed optimism in man's ability to investigate and understand nature, which occurred in the seventeenth century. In his book dealing more broadly with the idea of a divinely designed natural world, and the implications such an idea had in human society, C.J. Glacken discusses amongst other things the general trends in philosophic thought about nature at the turn of the eighteenth century.[2] It is

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[1] A. Monro "The Anatomy of the Human Bones" in The Works of Alexander Monro M.D. Edin. 1781, p.30.

[2] C.J. Glacken Traces on the Rhodian Shore Berkeley, 1967.

worth taking time to consider his findings.

In a number of different ways Glacken characterized a split in thought about natural order which occurred gradually over the course of the seventeenth and eighteenth centuries; on the one hand noting the continuing identification of nature as God's manifest creation, but increasingly as a "subordinate school" to the seventeenth century Cartesian mechanistic model, eschewing design arguments in favour of "efficient, secondary causes" and also eschewing manifest evidence in favour of the idea of "an underlying mechanical order . . . far removed from the bright and colourful beauties of external nature."[3] Glacken saw the former as an organic, preconceived order having its intellectual roots in the Christian/Platonic idea of an artisan diety, while the mechanical model had no teleological implications, assuming an inductive order where "the actions of the individual part of a whole are explained by known laws, the whole being the sum of the parts and their interaction."[4] Both viewpoints, he argued, led towards ever greater affirmation of man's dominion over nature, but the former idea

> called forth (what the abstract mechanical view had not) an appreciation of the beauties of nature, and stimulated study of the inter-

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[3] Ibid. pp. 426 and 391.

[4] Ibid. p. 378.

> relationships (even of secondary qualities so important in natural history) existing in it. By so doing, it was argued, one not only learned more about nature but found in these discoveries further evidence of the wisdom of God.[5]

The mechanical model, on the other hand, "/relegated/ final causes as active guides in investigation . . . to theology or private piety."[6]

In other words, Glacken is arguing that in the organic view of natural order the question of divine purpose continues to have a place, whereas in the mechanical view it is an issue removed to another realm of thought. It is a cleavage, Glacken continues, which deepened in the eighteenth century. He argued that the "subordinate school" of natural theology, however, inevitably holding greater sway in the natural and biological sciences than in the more abstract sciences of mathematics and astronomy, checked the philosophical assault on final causes by elucidating a theory identifying the environment as the active, purposive force.[7] ". . ./O/nce the design argument is eliminated as a fundamental explanation of

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[5] Ibid. pp. 391-92.

[6] Ibid. p. 378.

[7] Ibid. chapt. 11 "Final Strengths and Weaknesses of Physico-Theology" pp. 504-550.

the distribution of various kinds of life," writes Glacken, "what often remains is some form of environmental theory."[8]

Thus, in the eighteenth century, the environment came to be seen as an instrument wielding great power over human affairs. Glacken points to the development of ideas relating environment to disease, calling attention to how "exceptionally influential" were theories of environmental influence by the eighteenth century in questions concerning politics and culture and in "conceptions of disease and public health."[9] Glacken drew parallels between ". . . common areas of interest today between cultural anthropology and geography and public health" and the ideas expressed, for example, by the Scotsman John Arbuthnot, whose book An Essay Concerning the Effects of Air on Human Bodies (1731) Glacken claims was the principal source from which Montesquieu drew his ideas regarding climactic influences on man.[10] Moreover, environmental influence was seen to

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[8] Ibid. p. 520.

[9] Ibid. chapt. 12 "Climate, the Moeurs, Religion and Government" pp. 551-624.

[10] Ibid. pp. 563 and 567. Arbuthnot also wrote on other external influences affecting man's health. See An Essay Concerning the Nature of Aliments . . . Lond. 1731 and Practical Rules of Diet in the Various Constitutions and Degrees of Human Bodies Lond. 1732.

have a didactic purpose. Glacken draws on the relationships made between the physical, environmental influences and questions of morality. "The triad of climate, health and medicine", he wrote,

> evoked speculation into the physical and moral effects of climate, and such interrelationship suggested that human initiative could improve environmental conditions.[11]

Both these ideas--the mechanical and the organic view of natural order--flourished in Edinburgh in the early eighteenth century. It will be argued that surgeon-apothecaries are more likely to found advancing an organic view of natural order, but in order to place them in context let us look first in a more general way at the opportunities for medical education in Edinburgh in the early 1730's.

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With the establishment of the professors of medicine in 1726 and the opening of the Royal Infirmary in 1729, the medical school in Edinburgh began to take recognizable form. It was not a particularly distinctive form. As in most universities, for a medical student to obtain a medical degree in Edinburgh after 1726 his only obligation was to submit to examination by the medical professors. A professor--any professor--could present a candidate and

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[11] Ibid. p. 621.

recommend the faculty to "receive him on trials."[12] The faculty would then appoint the professors of medicine to examine him. It was not until 1763 that we find the first mention of a "faculty of medicine" in the Minutes,[13] at a time of extensive reorganization within the university.[14] Four years later, in 1767, the first Statuta Solennia was introduced, casting the first line between medical teaching and the degree.[15] The Statuta ordered that students were required to have taken specific medical courses "at this or some other university" prior to examination.

Until 1767, therefore, there was no institutional pressure directing students towards attendance at medical classes. It is Edinburgh's distinction that they did attend, in increasingly large numbers. The original professoriate of the Medical School has already been outlined.[16] John Rutherford was professor of the practice

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[12] See Senate Minutes /Sen. Mins./ Aug. 1740.

[13] Sen. Mins. Jan. 21 1763.

[14] See J.J. Cater "The Making of Principal Robertson" Scottish Historical Review XLIV (1970) pp. 60-84.

[15] P.P. 1837/XXXV Evidence, Oral and Documentary . . . op. cit. 1837 Order 33, Degree Regulations.

[16] See pages 135-40.

of medicine continuously from 1726 until he retired in 1766. John Innes died in 1733, but in 1738 Charles Alston was appointed "professor of medicine and botany", thus bringing the examining body back to four. He taught botany and the materia medica until his death in 1761. Andrew St. Clair taught the theory of medicine until he retired in 1744. Andrew Plummer gave classes in "chemie" until he died in 1755.

Alexander Monro, however, was undoubtedly the most successful and influential medical teacher in the university at this time. He was not part of the medical examining body, but was a member of the university faculty and had full voting privileges.[17] Without doubt he attracted the largest numbers of students,[18] and he taught continuously from 1720 until 1757, when he retired in favour of his son Alexander Monro secundus. He gave classes in anatomy, and as a perpetual manager of the Infirmary was in a position to ensure that he had use of the Infirmary as a teaching aid for his students.

With the acceptance of all members of the Incorporation of Surgeon-apothecaries into the Infirmary in 1736, that institution was also opened to all students willing to pay 2 guineas for the privilege. By 1741

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[17]Only two of the professors of medicine had that privilege.

[18]See E.U.L. Dc.5.95 "Students of Alexander Monro 1720-1757".

the East Wing of the new Infirmary had been completed, with plans for sixty-six patients.[19] (In the event, thirty-four patients were admitted to two floors of the East Wing in December 1741.)[20] The financial burden on students was not rigidly applied; in 1741 apprentices' fees were reduced to one guinea,[21] and tickets were issued free of charge to students in "necessitous circumstances".[22]

Surgeon-apothecaries continued to use their shops as the basis of their commerce and teaching. When recommending a medical student to Edinburgh in the early 1740's who had no previous medical experience, John Fothergill advised him "to get into some shop in Edinburgh, to attend the Materia Medica and Anatomy the first winter, and to go through a course of Experimental Philosophy."[23] They did not try to compete with Monro or the professors of medicine in any other way than by the insertion of the prohibitory clause already mentioned.[24] In completely consistent manner, however, corporately they continued to oppose

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[19] See Inf. Mins. Apr. 20 1738.

[20] Inf. Mins. Dec. 7 1741.

[21] Inf. Mins. Nov. 30 1741.

[22] See, for example, Inf. Mins. Mar. 11 1743 and Aug. 12 1742.

[23] Dr. John Fothergill Chain of Friendship. Selected Letters of Dr. John Fothergill of London 1755-1780. Camb. Mass. 1971, Fothergill to Alston July 14 1743, pp. 79-80.

[24] See page 132 and C. Drummond "Adam Drummond . . ." op. cit. 1974.

specialized teaching as an unacceptable form of competition. When in conflict with the managers of the Infirmary in 1736 some of the surgeon-apothecaries threatened "to set up Teachers of all the Branches of Medicine, in Opposition to the Professors in the University."[25] They were checked by other members, however, who feared that by supporting such a move they would be lending "their Shoulders to the few who were to commence Teachers to mount on, by acknowledging them to be the most sufficient of their Number."[26]

Not a great deal of work has yet been done on the work of the first professors of medicine in Edinburgh.[27] The organization and operation of the chemical "elaboratory" has been studied.[28] From September 1726 until 1742, when the enterprise was sold to two druggists,[29] it was conducted by the professors of medicine as an extensive and lucrative business enterprise, which prepared and sold drugs to apothecaries, surgeon-apothecaries, druggists

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[25] A Vindication of the Managers of the Royal Infirmary . . . op. cit. 1737, p. 35.

[26] Ibid. pp. 35-36.

[27] The forthcoming thesis of Dr. C.J. Lawrence will fill this gap.

[28] R.G.W. Anderson The Playfair Collection and the Teaching of Chemistry at the University of Edinburgh 1713-1858 Edin. 1978, chapt. I "Early Chemistry Teaching in Edinburgh".

[29] Ibid. p. 9.

and private individuals, in Edinburgh and the surrounding area.[30] We do not know precisely when they began to teach; it was not until 1734, following the death of John Innes, that teaching was organized systematically. It was recorded that St. Clair would teach the Institutes each morning at the hour 10-11 a.m., Rutherford would teach the practice of medicine at 11-12 a.m. and Plummer would teach "chymie" at 2-3 p.m.; and "this method of teaching" was ordered "to be continued yearly . . . till it be altered by the appointment of the Partners or major part of them."[31] It seems clear from these instructions that teaching was a function of their business enterprise, not their university affiliation.

There are no surviving student lists for these men, nor for Charles Alston, who at this time was teaching botany in the Physicians' Hall. From the quoted receipts for "colleges" in the "elaboratory" minutes--£105 st. in 1731[32] and £189 st. in 1734[33]--it would appear they had approximately

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[30] Ibid. E.U.L. Mss. Gen. 1959 "Minutes of the Professors of Medicine and Partners of the Chemical Elaboratory in Edinburgh".

[31] Ibid. "Minutes of the Professors . . ." Aug. 19 1734.

[32] Ibid. Dec. 27 1731.

[33] Ibid. Aug. 19 1734.

ten to fifteen students each.[34] They appear to have been well regarded by students; John Fothergill's warm eulogism[35] was largely echoed by another student, John Boswall,[36] although Boswall was critical of the manner and teaching of both Rutherford and Alston.

Each of these contemporary observers, however, offers information only on the manner, not the content, of the professors' lectures. Of the content, it is generally accepted that they based their own work on that of Hermann Boerhaave. Boerhaave's name and Boerhaave's texts were used to provide legitimation for the newly-established medical school and its professors,[37] and any discussion of the work of these men in Edinburgh is always done within the context of his influence.[38] We will therefore need

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[34] Each student paid 3 guineas for each "college".

[35] "Dr. Fothergill's Account of the Edinburgh School of Medicine" in J. Thomson An Account of the Life . . . of William Cullen M.D. op. cit. 1859, I pp. 532-35.

[36] See page 174 and "Papers of Dr. John Boswall" op. cit. pp. 12-14.

[37] See page 136.

[38] See for example E. Ashworth Underwood Boerhaave's Men at Leyden and After Edin. 1977; R.G.W. Anderson and A.D.C. Simpson (eds.) The Early Years . . . op. cit. 1976 passim; A. Logan Turner The Story of a Great Hospital . . . op. cit. Edin. 1937; J.D. Comrie "Boerhaave and the early Medical School at Edinburgh" in Memorialia Hermann Boerhaave Haarlem 1939.

to look at the source of this influence.

Boerhaave was appointed lector in medicine at Leiden university in 1701.[39] He was subsequently appointed Professor of Botany in 1709, Professor of Chemistry in 1718, and he alone reactivated interest in clinical teaching at Leiden by instituting classes at St. Cecilia's Hospital in 1714. An intelligent and perceptive academic, he was undoubtedly the most influential medical professor in Europe until his death in 1738. He synthesized for his students the most up-to-date scientific theories, and produced two authoritative medical texts at a time when clear, concise guides to current medical scholarship were simply not considered necessary.[40] Scotsmen were conspicuous amongst Leiden's students, both before and after Boerhaave's tenure there.[41] We do not know precisely what contribution Boerhaave's presence there made to the attraction of Scots to Leiden. It is likely that a majority of the fellows of the College

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[39]The discussion of Boerhaave and his work is largely taken from G.A. Lindeboom Herman Boerhaave: The Man and His Work Lond. 1968.

[40]Institutiones Medicae In Usus Annuae Exercitationis Domesticos, Digestae ab Hermanno Boerhaave 1709; Aphorismi de Cognoscendis et Curandis Morbis In Usum Doctrine Domesticae Digesti ab Hermanno Boerhaave 1710.

[41]See W.R. Goslings "Leiden and Edinburgh: The Seed, the Soil and the Climate" in R.G.W. Anderson and A.D.C. Simpson (eds.) The Early Years . . . op. cit. 1976, pp. 1-18.

of Physicians of Edinburgh, in addition to a number of surgeon-apothecaries and unknown numbers of apprentices, had attended medical classes at Leiden.[42]

"Boerhaavian" medicine is generally taken to mean the adoption of iatro-mechanical theories based on Newtonian physics.[43] It encompassed the centrality of the study of anatomy, a curpuscular theory of matter and the explanation of motive powers in terms of the size, the shape, and the cohesive, attractive or repulsive properties of particles of matter.[44] Boerhaave's physiology provided physicians with a comprehensive picture of the mechanics of the human body, but contributed little that was new to therapeutics.[45] His analysis of fever, for example, rested upon diagnosis of the fluids, principally the blood,[46]

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[42]See R.W. Innes Smith English-speaking Students of Medicine at the University of Leyden Lond. 1932.

[43]C.J. Lawrence "Early Edinburgh Medicine . . ." op. cit. 1976, p. 82.

[44]G.A. Lindeboom Herman Boerhaave . . . op. cit. 1968, pp. 52-55.

[45]C.J. Lawrence "Early Edinburgh Medicine . . ." op. cit. 1976, pp. 84-85. See also Lester S. King The Medical World of the Eighteenth Century Chicago 1958 for a summary of Boerhaave's physiological and therapeutic ideas.

[46]Dale C. Smith "Medical Science, Medical Practice and the Emerging Concept of Typhus in Mid-Eighteenth Century Britain" in W.F. Bynum and V. Nutton (eds.) Theories of Fever . . . op. cit. London 1981, p. 125.

for which treatment invariably involved bleeding, purging, sweating or by other means evacuating morbid matter and fluids from the body. These were traditional therapeutic practices; the fever debates in Scotland in the 1690's turned essentially on such issues.

Boerhaave's physiology was non-speculative; in his mechanistic view of the human body there was no room for design arguments, although there is no reason to believe he was irreligious. He merely avoided theological debate in dealing with the question of motive powers. One researcher analyzing Boerhaave's lectures on the nervous system has concluded that "according to Boerhaave the 'condition humana' is, ultimately, wholly dependent on the causality of God".[47] Yet, if we listen to Boerhaave's own words, "The physician should study the human body as God created it but he should evade the question why it is as it is. That question is insoluble. Physiology is directly dependent upon anatomy, and does not need to rely on a distinct principle of life."[48] As has been recently observed, Boerhaave viewed the body fragmentally, placing "little emphasis on the overall co-ordination or integration of body functions . . . /being/ concerned primarly

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[47] Dr. B.P.M. Schultze Hermanni Boerhaave Praelectiones De Morbis Nervorum 1730-1735 Leiden 1959, p. 410.

[48] G.A. Lindeboom Herman Boerhaave . . . op. cit. 1968.

with the dynamics of the blood vascular system. Men in this model had a second substance, the soul, the repository of sensations and will, unconnected with the vital functions.[49]

Boerhaave's therapeutics were conducted on a similar basis. In his clinical lectures he gave as complete a personal history of each patient as possible, directing students' attention to the progress of the disease in each case.[50] His clinical lectures were thus anecdotal, not synthetic, and his text book on medical practice was, in traditional fashion, a collection of aphorisms. Although Boerhaave's work was probably of great value in helping students to synthesize current scholarship in physiology, his main contribution to therapeutics appears to lie in his insistence upon an empiricism which offered no possibility of synthesis. Students came away from his clinical lectures with a great number of case histories, but no general rules to govern their own practice.

As far as we know, the medical professors in Edinburgh adopted Boerhaave's principles and methods.

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[49] C.J. Lawrence "The Nervous System and Society in the Scottish Enlightenment" in B. Barnes and S. Shapin (eds.) Natural Order . . . op. cit. 1979, p. 24.

[50] G.A. Lindeboom Herman Boerhaave . . . op. cit. 1968, chapt. XIII "Boerhaave as a Clinician" pp. 283-305.

No work has been done on St. Clair, and analysis of the lectures of John Rutherford concerns the clinical lectures he conducted in the Infirmary commencing 1748.[51] Predictably, the practice there was seen to be of a generally traditional nature.[52] Scholars have analyzed Andrew Plummer's published works,[53] and have found them to be essentially "Boerhaavian" because Plummer attempted to articulate a theory of the cohesive properties of particles of matter. "We can have no other idea", Plummer wrote,

> of a solid or consistent body in general, as distinguished from a fluid, than that the parts of a solid cohere together by some power, which retains the particles in their situations, with respect to one another, and makes them to resist their separation or division, till that power is overcome by a superior force.[54]

Apart from this corpuscularianism, however, it would appear that the professors of medicine followed Boerhaave in approaching their subject in an empirical and didactic manner. It is generally believed, for example, that theoretical explanations of chemical

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[51] Very few of Rutherford's earlier lectures appear to have survived. The only material not related to his clinical lectures held by Edinburgh university library, for example, is Gen. 1928 "Lectures on Boerhaave's Aphorismi de cognoscendis et curandis morbis 1737-38 . . ."; for analysis of the clinical lectures see C.J. Lawrence "Early Edinburgh Medicine . . ." op. cit. 1976.

[52] C. Lawrence "Early Edinburgh Medicine . . ." ibid. p. 89.

[53] R.G.W. Anderson The Playfair Collection . . . op. cit. 1978 and A.L. Donovan Philosophical Chemistry in the Scottish Enlightenment Edin. 1975

[54] A.L. Donovan Philosophical Chemistry . . . op. cit. 1975, p. 37.

phenomena did not occupy Plummer unduly as a teacher. He died "a very rich man", almost certainly a result of the successful marketing of Plummer's Pill, a compound of antimony and mercury popular for nearly a century.[55] He was by all accounts an extremely able pharmaceutical chemist, and his lectures were largely confined to demonstrations of the preparation of medicines and discussions of the practical problems of their preparation.[56] "He took as his subject the preparation of medicine and he stuck to his subject with great persistence."[57]

In looking at the work of the professors of medicine, therefore, there would appear to be little basis upon which to build an argument for their definitive contribution to the Edinburgh Medical School. When we come to look at Alexander Monro the picture is a little different. He enjoyed an extensive reputation for his knowledge of physiology, his skill as an anatomist, and particularly for his work on the anatomy of the bones and the nervous system. His most celebrated achievement was the publication of a textbook on anatomy, first published in 1726 and in

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[55] Ibid. p. 37.

[56] R.G.W. Anderson The Playfair Collection . . . op. cit. 1978, p. 9.

[57] A.L. Donovan Philosophical Chemistry . . . op. cit. 1975, p. 38.

its sixth edition by 1758 with five of them including an anatomy of the nerves.[58] He was a superb medical technician, a master at the art of dissecting, preparing and preserving specimens.[59] In all probability, his "History of Anatomy" was equally popular, but it was never published.

Alexander Monro was, however much more than an anatomist and a medical technician. He had been raised in the environment of the surgeon-apothecary, and as such he was a dedicated, practising teacher. It can be argued that in this respect he was emulating the work of Boerhaave. It can, however, also be argued that in his commitment to his pedagogic role, he was reflecting the heritage of the institution of which he was a member. His dedication to teaching went beyond mere practical necessities; in his Autobiography we can see his deep sense of commitment to this role. He took his lecture hour very seriously; for forty years "he esteemd /sic/ the ordinary Hours of Teaching so sacredly dedicated to his Pupils, that he never disappointed them half an hour, unless when confined to his House by Sickness."[60] The Autobiography itself

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[58] A. Monro Anatomy of the Human Bones Edin. 1726, /1732, 1741, 1744, 1750, 1758/.

[59] See in D.W. Taylor The Monro Collection in the Medical Library of the University of Otago Dunedin 1979, the discussion of the Mss. "Treatise on the Anatomical Encheireses" pp. 91-92.

[60] Monro Autobiography p. 83.

had a didactic purpose; it was an exercise by Monro outlining, by the example of his own life, the steps he believed all young men must take to live useful and virtuous lives. "From the preceding Account of Dr. Monro senior's literary or publick Life", it concluded,

> Students may be more convinced how necessary assiduous application to the Science they intend to acquire the Knowledge of, is towards obtaining such a Character as they ought to aspire at, than they coud /sic/ perhaps be by any Admonition or Argumentation, and those who have Knowledge and Talents may hence be induced to apply these to the general Good and Advantage of Society.[61]

Undoubtedly, Monro was successful in his desire to be seen as the source of inspiration and strength to his pupils. He was the source of unquestionable authority for students, as when he had to respond to a student's query regarding Monro's explanation of sensation in the bones. "He had said in his book", the student recalled,

> that the bones had nerves, and that the nerves were the organs of sensation and yet the bones had no sense. This appear'd to me to be a contradiction. he answered it in this manner that the nerves when they were compress'd had no sense, which was the case in the bones.[62]

Providing satisfactory explanations, such as the above, for the complex structures of the human body was Monro's forte. This student found him "mightily fitt to teach"

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[61] Ibid. p. 92.

[62] "Papers of Dr. John Boswall" op. cit. p. 6.

because "he excelled in the art of making very Difficult and obscure things perfectly plain and easy."[63] Competent in all branches of medical knowledge, he excelled in anatomy. He had read everything there was to be read on the subject, both ancient and modern; "He was indefatigable in study, had an incredible memory, and with this and with these he had a wonderful judgement in digesting what he had read."[64]

Monro's commitment was to the task of conveying useful medical knowledge, simply and succinctly, to young, inexperienced students. We see the same commitment spelled out by William Graeme, the surgeon-apothecary, in 1729.[65] Graeme, you will remember, had been promoting greater attention to medical practice by physicians in 1727;[66] now he was setting down his ideas on how students should be taught. He was not interested, he wrote, in using medical knowledge as a vehicle for demonstrating his own scholarship, which he claimed was the usual practice of medical professors teaching in universities. "The Professors are only obliged", he wrote,

> to read some few publick Lectures: These certainly serve very well to shew the learning of the

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[63] Ibid.

[64] Ibid.

[65] /W. Graeme/ An Essay on the Method of Acquiring Knowledge in Physick Lond. 1729.

[66] See pages 170-71.

> Professors, but cannot so much as be imagined sufficient for the Instruction of Young Students . . . besides, as the Professor chooses indifferently what subject to treat of, it is more than probable that it is something not to be understood by a Beginner, who has not heard the first Rudiments of the Art explained; And really those Discourses are rather designed for the Learned, than for other People.[67]

As with Monro, Graeme's interest lay in teaching young students, not conversing with mature scholars. Graeme wrote that he wanted to bring them to a "competent Knowledge" quickly and effectively. He argued for an oral presentation, in English, by someone who was familiar with, and could synthesize, all the current scholarship. A good teacher, he argued, was worth a dozen books.

> . . . the hearing a regular System brings one to a competent Knowledge much sooner than reading, and that one reads afterwards to much greater Advantage . . . . There is a certain easy and familiar Method of conveying of Things, viva voce, of which the necessary accuracy of a printed Book deprives it; for here Things can be repeated, put in different Shapes, and inculcated again and again, 'till they are, in a manner forced to become intelligible. This is a truth notoriously known to all who have studied any Science, under a Master endued with proper Talents.[68]

Perhaps the most significant indication we have that in his commitment to medical teaching Monro was doing something more than merely emulating Boerhaave is the fact that Boerhaave adhered to traditional medical scholarship (and was followed by the professors of medicine at Edinburgh)

67W. Graeme, An Essay on the Method . . . op. cit. 1729, p. 23.

68Ibid. pp. 12-13.

in always lecturing in Latin, whereas from the commencement of his teaching career in 1720, Monro lectured in English. This was a significant departure for Monro; it shows that in the end pedagogic demands were pre-eminent, and that Monro recognized scientific works as belonging to a different genre from artistic and literary writing. He made this clear in his justification for publishing in English the volumes produced by the Medical Society he helped form in 1731.[69] Medical communications, he wrote, needed to be released from the constraining ties of language style and grammar inherent in the use of Latin. "The Language wherein it will be most acceptable to us," he wrote,

> to have the Observations and Essays wrote, in English, in which the whole Work is designed to be published, not without some Regrete /sic/ on our Part; because we, and probably some of our Correspondents, might have been more certain not to transgress at least in Latin Rules of Grammar: But several obvious enough and more forcible Reasons dissuaded us from this Language; and tho' we may not write pure English, which cannot be expected from our Country, yet we would willingly hope we may be able to express ourselves intelligibly /my emphasis/, which is the principal Thing in a Work of this Kind, where Elegance of Stile cannot be expected, and Wit would be hurtful. If the learned World shall ever think our Collections deserve to be more generally understood, we are willing to contribute all in our Power to their appearing in a more Universal language.[70]

We can also read in this statement the Scottish sense of insecurity in the adoption of English. Monro obviously

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[69] Medical Essays and Observations, Revised and Published by A Society in Edinburgh 4 vols. Edin. 1733-44.

[70] Ibid. Vol.I Preface p. xxii.

overcame his own perceived inadequacies; "/h/is style was fluent and elegant," wrote Somerville regarding Monro's lectures, "and his pronunciation perhaps more correct than that of any public speaker in Scotland at this time . . . ."[71]

Monro also stood apart from the professors of medicine in promoting the study of the practice of medicine more extensively. It was largely this purpose which lay behind the medical publishing venture. The Medical Society formed in 1731[72] published four volumes of observations on medical cases between 1732 and 1736, and a final volume in the 1750's. In the first volume the editors made it clear they were primarily interested in publishing empirical data; case histories of Infirmary patients were particularly mentioned as possible material. Small treatises on theory would be tolerated, the editorial said, but the emphasis was upon publishing observations and treatments of disease.[73] The material published partially fulfilled the demand; it was an eclectic amalgam of unusual cases, new medical and surgical treatments, papers on aspects of physiological and anatomical theories and a large number of contributions from

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[71] T. Somerville My Own Life and Times, 1741-1814 Edin. 1861, p. 21.

[72] In addition to Monro, the other members were the four professors of medicine, eight fellows of the College of Physicians and John McGill.

[73] Medical Essays . . . op. cit. Vol. I Preface.

Alexander Monro on subjects relating to his own particular anatomical interests. Monro claimed he was disappointed with the response of his colleagues;[74] he complained that he was the only contributor to use case histories from the Infirmary, and that the other physicians lost interest after the publication of the first volume in 1732 and consequently much of the material in subsequent volumes was his own.

Monro's solitary promotion of the study of medical practice through the use of the Infirmary is not entirely borne out by the evidence, although Monro undoubtedly used the Infirmary most extensively. He used his tour of duty in the Royal Infirmary as an extension of his anatomy classes, "putting the students on their Guard to remark all the uncommon Incidents which happened to the Patients" and in addition each Saturday gave

> an Account of each Case under his Care in the preceding Week, explaining the Nature of their Diseases, the reasons of their symptoms, the Views he had in treating them in the manner they saw marked in the Journals of the House, and how far what he had done answered or disappointed his Expectations.[75]

What Monro does not make clear, of course, is that he could do this because of the privileged position he held as one of the "Infirmary surgeons". Physicians may have been disinclined to develop the study of medical practice, we

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[74] Monro Autobiography p. 87.

[75] Ibid. p. 86.

don't known, but to place himself within the context of the activities of the professors of medicine and fellows of the College of Physicians was misleading. If Monro had looked at his work in relation to other surgeon-apothecaries the situation would have appeared differently. Here there was interest. The apprentice of John McGill during the years immediately following the establishment of the Infirmary had a two volume "Infirmary Book" he was able to assemble, he said, "Mr. McGill being one of the Surgeons".[76] Moreover, William Graeme had similar professional interests in studying medical practice. In his partnership with George Martine, Graeme taught the practice of medicine. As we have already seen, one of Graeme's major criticisms of physicians was that they did not treat sufficiently large numbers of patients to give them a clear understanding of disease.[77] He wanted to see medical practice organized more efficiently, he wrote in 1729; in what was probably a reflection of his own apprenticeship training he wrote that students should be taught "in a regular Method, /not/ in a random Way, as Accidents happen."[78] Graeme was not one of the six surgeon-apothecaries appointed to the

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[76] "Papers of Dr. John Boswall" op. cit. p. 16.

[77] See pages 170-71.

[78] /W. Graeme/ Essay on the Method . . . op. cit. 1729, p. 23.

Infirmary; he had by this time left Edinburgh, but his opinion that medical practice could be studied more efficiently in a hospital[79] shows that Monro was the successful, not the only, promoter of the study of medical practice in Edinburgh at this time.

The Royal Infirmary had been canvassed as an institution to serve the sick poor, which in the limited sense of supplementing poor law provisions it did. It was also canvassed as a source of medical education for students, and all the evidence suggests that this function of the Infirmary's role drew its principal support from members of the Incorporation, and was temporarily appropriated by a few surgeon-apothecaries headed by Alexander Monro. Elsewhere I have argued that pressure from the Incorporation of Surgeon-Apothecaries was probably instrumental in convincing the managers of the Infirmary that access to the patients there should be made universal.[80]

These facts point to a more diffuse interest in the study of medical practice than that usually outlined, where the introduction of clinical lectures by John Rutherford in 1748 is seen as the critical event. In fact, growing interest in the case histories being generated by the Infirmary can be documented with little

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[79] Ibid.

[80] See pages 151-63.

reference to the formal institution of lectures by the professor of the practice of medicine. In this account, the critical events occurred in 1738, when the managers allowed access to all students and apprentices,[81] and 1741 when rules regarding the patient registers were amended. Item XVIII of the Rules established in the Infirmary in 1730 had stated that "A Register or Record shall be kept in the Hospital, in which is to be entered the Names of all Patients that shall be taken in, the Parish of their Birth or Residence, their Age, Disease, when taken in, when dismissed, and whether Cured or Dead."[82] In the wake of the admission of the entire membership of the Incorporation of Surgeon-Apothecaries, and all students and apprentices paying the two guinea fee, Alexander Monro was made responsible for drawing up new rules for the organization of the Infirmary.[83] In these new rules, provision for recording information about patients was greatly increased, and the focus was shifted from the person to the disease. In addition to the admissions ledger, the clerk was ordered to keep a daily ledger, indexed by bed to indicate the continuity of treatment, and a separate journal containing a list of all reported diseases, cross-referenced to the

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[81] See page 162.

[82] An Account of the Rise and Establishment of the Infirmary . . . op. cit. 1730, pp. 11-12.

[83] Inf. Mins. Sept. 28 1741; Monro Autobiography p. 85.

relevant volume and page of the daily ledger and indexed alphabetically when it was full.

Hospital case histories were obviously the property of the managers, and there is no indication of any attempt to bring them under the control of any one man or group other than the general managers. In the 1741 regulations, the managers ruled that the journals could be consulted and copied, in the presence of the clerk, after they had granted permission.[84] Moreover, each Saturday afternoon at 3 p.m. the clerk was to attend the theatre

> and there read slowly all the transactions of the preceding week Contained in the Ledger so that the Students Belonging to the Infirmary may with Books in forms of the journals take notes from which they may write out the history of the Cases treated there.[85]

Unfortunately, none of these records has survived, and it is therefore impossible to say how well they were kept. However, from the constant references to them made by the managers, it seems clear they were an important item in the operation of the Infirmary, and were probably kept with as much care as the competence of the particular clerk allowed. They proved a popular teaching resource for students and apprentices, and the clerk's job soon became actively sought by them. In 1749 his duties were recorded in more detail; it seems clear that by this date he had

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[84] Inf. Mins. Sept. 28 1841.

[85] Ibid.

come to perform an important administrative and pedagogic function within the Infirmary. He kept all the records, conveyed them to students and transcribed case histories for 2d. per page.[86] Later that year he was ordered to read case histories twice on Saturday, from 9-12 a.m. and from 3-6 p.m., and in 1755 he was required to add Wednesday from 5-8 p.m. to his agenda.[87]

It is in the wake of this busy commerce in case histories that clinical instruction within the Infirmary by the professors of medicine was introduced. In 1748 John Rutherford requested the use of the "operation room" for a course of clinical lectures.[88] He undertook them, we learn from his lecture notes, "at the instigation of my Pupils",[89] and he chose patients to illustrate his lectures. He did not at this point have access to the wards; "I shall . . . examine", he told his pupils, "every patient capable of appearing before you."[90] Twelve months later the managers extended this privilege to all the professors of medicine, allowing them "during their attendance" (i.e. during their normal tour of duty as fellows of the College of Physicians), to give clinical lectures to students with

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[86] Inf. Mins. Jan. 23 1749.

[87] Inf. Mins. Oct. 2 1749; Inf. Mins. Dec. 29 1755.

[88] Inf. Mins. Feb. 1 1748.

[89] E.U.L. Gen. 72 /Rutherford/ Clinical Lectures c.1752-55, p.10.

[90] E.U.L. Gen.2009 /Rutherford/Clinical Lectures 1755-56.

an Infirmary ticket.[91] Early in 1750, obviously pleased with the increased ticket sales the lectures had generated, the managers ordered the Treasurer to fit up a clinical ward of ten beds (later increased to twenty) and also allowed the professors of medicine to institute clinical lectures whenever they wished.[92] Rutherford was also given freedom to conduct post-mortem examinations "as he shall think proper", thus rescinding an earlier regulation prohibiting dissections without permission from the managers.[93]

Student demand, therefore, was a significant factor in decisions taken regarding the development of clinical lectures in the Royal Infirmary. The managers were responding not to initiatives from the professors of medicine, but to students' desire for tuition in the practice of medicine. Students were also taking initiatives in more traditional forms of medical education. Shortly after the establishment of Alexander Monro's Medical Society another society, also called the Medical Society and subsequently to obtain a charter as the Royal Medical Society, was established. This latter Medical Society was, and remains

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[91]Inf. Mins. Jan. 23 1749.

[92]Inf. Mins. Jan. 1750.

[93]Inf. Mins. Feb. 5 1750; Jan. 19 1742.

[94]See J. Gray History of the Royal Medical Society 1737-1937 Edin. 1952.

to this day, wholly a student society, initially conceived as a forum where members could practice delivering dissertations and the various oral exercises they were expected to master in preparation for their graduation examination. Organized informally in 1734, it soon evolved into a centre for debate where medical ideas were discussed and criticized. Unfortunately, records of these debates have only survived from the 1750's, and we have no way of knowing precisely what earlier work was presented by students.

II

The general thrust of medical interest in Edinburgh, then, lay in the desire to acquire a greater knowledge of natural phenomena through empirical enquiry. It was, it should be emphasized, a matter of general interest, but we can suggest points of divergence amongst the medical community. The first professors of medicine and Alexander Monro worked to this end within the general theoretical framework of the mechanistic, non-teleological empiricism most generally identified with the ideas of Herman Boerhaave. To this end they pursued both the study of the mechanisms of the human body and the incidence and course of disease within the clinical setting of the dissecting room, the laboratory and the Royal Infirmary. They worked to make anatomy,

physiology and chemistry distinct areas of study and they began to treat the incidence of disease in the same clinical manner in the Infirmary.

Surgeon-apothecaries, also working toward increasing natural knowledge through the study of anatomy, physiology and pathology, worked from different premises. They were never able entirely to divorce their political and social from their professional interests, and, indeed, would have felt such a distinction artificial. In their determination to differentiate themselves from physicians in the 1680's and 1690's, surgeon-apothecaries offered a physiological model of man in the natural world bearing a resemblance to the medical theology of Sir John Clerk, a model in which the environment played a key role in determining bodily functions. It was the first attempt in Edinburgh to formulate general principles upon which to understand disease aetiology, a tentative attempt to underwrite a more empirical approach to the practice of medicine. The surgeon-apothecaries had outlined in a political context in 1707 the extent to which they believed that disease was a social as well as a physiological problem, and we can see them applying this idea in a physiological context also.

To make good their claim to practice medicine surgeon-apothecaries had resorted to various tactics, designed largely to undermine the integrity of the physicians' professional identity. We hear, for example, of the

surgeon-apothecary who quarrelled with "a Patient of considerable quality and very opulent Estate, for calling in a Phisitian", arguing that he knew all the physician's prescriptions so why waste the guinea?[95] We find them threatening to print the physicians' prescriptions, and arguing that drugs should be made more palatable.[96] Behind the mischief value of such activities, however, lay a line of argument which they used to justify a social interpretation of medical practice. "The very light of nature does teach", they had argued in the 1680's, "that it is fit for a Chirurgeon to be an Apothecary, most Chirurgical operations requiring specifick, and different Drugs, according to the nature of the Sore. And varying dayly and hourly according to the temperament, age and many other accidents."[97] In 1707 we find a similar line of argument being employed in the service of toleration for a diversity of medical practitioners, who might be more acceptable to patients because of "/t/he great Varieties of the Dispositions of Persons and the Accidents that may befal them

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[95]Wm. Eccles Historical Account . . . op. cit. 1707, p. 4.

[96]Ibid. p. 11 and "The Overture given in for an Act . . ." op. cit. 1707.

[97]Information for the Chirurgeons and Chirurgeon-Apothecaries of Edinburgh . . . op. cit. n.d.

in the Matter of their Health . . . .[98] In these two quotations the surgeon-apothecaries are using the term "accidents" in a particular manner. It is a term used by Sydenham and described by Lester King as the Aristotelian classification of a modification caused by factors external to the substance under question.[99] It is worth taking time to see what King had to say regarding the significance of Sydenham's use of the term.

In this and in numerous other articles devoted to the question of causation in the late seventeenth and early eighteenth century,[100] King explained how the concept of cause was, slowly and with much confusion, being extricated from the Aristotelian tradition whereby "/t/he characteristics of each disease derive from its essence, which in Aristotelian terms is the formal cause."[101] In his

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[98] See page

[99] Lester S. King "Empiricism and Rationalism in the Works of Thomas Sydenham" Bulletin of the History of Medicine 44 (1970) pp. 1-11, pp. 8-9.

[100] Lester S. King "Boissier de Sauvages and Eighteenth Century Nosology" Bulletin of the History of Medicine 40 (1966) pp. 43-51; Lester S. King "Some Problems of Causality in Eighteenth Century Medicine" Bulletin of the History of Medicine 37 (1963) pp. 15-24; "Medicine in 1695: Friederich Hoffman's Fundamenta Medicinae" Bulletin of the History of Medicine 43 (1969) pp. 17-29; Lester S. King "Rationalism in Early Eighteenth Century Medicine" Journal of the History of Medicine and Allied Sciences 18 (1963) pp. 257-271. This topic also forms part of his two books on eighteenth century medicine The Medical World of the Eighteenth Century op. cit. 1958 and The Philosophy of Medicine: The Early Eighteenth Century Camb. Mass. 1978.

[101] Lester S. King "Empiricism and Rationalism . . ." op. cit. 1970, p. 5.

analysis of Sydenham's work on fevers, King makes clear two different kinds of causative explanation, which he argues Sydenham does not clearly distinguish, "intermingl/ing/ the two types of explanation in an indiscriminate and unselfconscious fashion."[102]

On the one hand, King argues, Sydenham explained the cause of fever in terms of "some intrinsical internal property, involving the "essence", as in his explanation of fever as a defence mechanism, where the quality of the blood was understood to change by a process of "concoction", analagous to "fermentation" or "ebullition", in order to make a "separation of the sound from the unsound."[103] King rejected explanation such as this where, he argued "Sydenham is 'explaining' fever by properties, inherent in the blood, that have the 'power' to concoct and to separate off the impure from the pure. "Obviously", concluded King, "this is a variation of the old familiar 'faculty' or essence, and represents only a tautology - that fever is due to that property of the blood which produces dever . . . ."[104] Explanations such as this formed the basis of early iatromechanical treatises in England, i.e. "the Blood (like a Pot boiling over the fire) grows hot above measure, and

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[102] Ibid. p. 8.

[103] Ibid. p. 7.

[104] Ibid. pp. 7-8.

being rarified with a swelling spume, distends the Vessels, excites a more quick pulse, and like a sulphureous Liquid, having taken fire, diffuses a burning heat on every side."[105]

To explain fever in terms of qualities in the blood "does not go outside the entity to be explained", wrote King, and he thus condemned Sydenham's use of this method of explanation as "analytic", not "empirical".[106] Empirical explanation involved criteria which went outside the phenomena being explained. In Sydenham's case, it could mean resorting to an explanation of the cause of fever in terms of a "peculiar atmospheric diathesis",[107] or the vigour of the blood in terms of seasonal variation,[108] or to "accidental circumstances" or "accidental causes" which modified the normal behaviour of the physiological phenomena in question.[109]

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[105] Thomas Willis Diatribae duae medico-philosophicae . . . 1659, quoted in T.M. Brown "The College of Physicians . . ." op. cit. 1970.

[106] Lester S. King "Empiricism and Rationalism . . ." op. cit. 1970, p. 8.

[107] Ibid. p. 6.

[108] Ibid. p. 8.

[109] Ibid. p. 8. It is a distinction, writes, King, of more concern to the patient than to the physician looking for precise, causal relationships. "I would emphasize", he writes, "the use of the word 'accident' in this connection. The reference, of course, is Aristotelian, with the distinction between 'essence' and 'accident'. The essence determines the intrinsic properties of the blood. Particular environmental factors, however, can modify the way in which these

It seems reasonable to suppose that the surgeon-pothecaries were using the term "accidents" in this manner. It was a means of conveying some form of explanation of causation external to the essence: a physician would have referred to these causes as the non-naturals.[110] And we find them using a similar line of argument, this time specifically referring to disease causation, in distinguishing themselves from the physicians in the 1690's. The physicians' patent had outlined the prevailing medical distinction between the care of internal and external disease. ". . ./T/he said Chirurgeon Apothecaries", it read

> are to have the Liberties of Curing all sorts of Wounds, Bruises, Fractures, Dislocations, Contusions, Tumours, Ulcers, and such like, being the subject of Chirurgical operation, and the accidents arising thereupon allenerly; But that all diseases of an internal origin, are only to be Cured by Physicians (Except as is above Excepted.)[111]

The surgeon-apothecaries' charter read:

> . . .their Majesties now wils and Declares that the meaning of the said patent of Erection, in favour of the Physicians of Edinburgh, was that

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properties manifest themselves. 'Accidents' do not alter the essence but can modify the appearances. From the practical standpoint the accident may have extreme importance for the patient. 'Accidents', such as too much ingesta or too much blood-letting, may determine whether the particular patient lives or dies, but from the standpoint of logic or system, these have only a subordinate position."

[110] See L.J. Rather "The six things non-natural . . ." op. cit. 1968.

[111] Charter of the Royal College of Physicians of Edinburgh, 1681, in History and Laws . . . op. cit. 1925.

> the Curing of all Diseases, Originally internal should solely and privatively belong to them, and that all Distempers arising from External Causes, and the Accidents thereof, whether the Remedies Administrat and applyed for Removing thereof, be external or internal, is the proper and Adequate Subject of Chirurgical Operations, and does propperly belong to the Chirurgions, and Chirurgion-Apothecaries . . .[112]

On the strength of this patent the surgeon-apothecaries claimed the right to practice medicine, by arguing that all diseases arose from external causes. We know the manoevre disturbed the physicians, because in 1699 the College contemplated legal action. The surgeon-apothecaries were advised by an unidentified legal council that the physicians had

> raised a process of reductione and Declaration . . . upon the ground . . . that it ought to be found and declared that all diseases that are of their own nature internall and flow from internal causes are originally internall and that the Chirurgeons do not have the cure of any such diseases but that the same are to be cured by the prescript and directions of the phisicians /sic/ of the Colledge within the limits mentioned in their patent.[113]

The writer also informed the surgeon-apothecaries that the physicians would attempt to clarify the ambiguous clause in their own patent by the insertion of a clause to the effect that "the words forbiding /sic/ the Chirurgeons from practice in Cases of diseases originally internal does

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[112]Archives - R.C.S.E. Royal Patent, 1694.

[113]Town-Council Archives, Moses Bundle 108/4503 "Information for the Chirurgeon-Apothecaries against the Royall Colledge of Phisicians." 1699.

necessarily forbid them from the cure of fevers and fluxes which happen frequently with wounds, fractures, and the lyke . . . ."[114] He advised the surgeon-apothecaries that the physicians did not have a strong case, basing his opinion on legal technicalities regarding the precedence of ambiguous clauses in royal patents, the College's acceptance of the surgeon-apothecaries' patent in July 1695 and the writer's confidence of the acceptability of the existing terminology that

> distempers occasioned from externall Cause . . . viz. contusions or suchlyke are often happen from externall causes as for instance if a man shall fall from a horse he may be affected with pains without any externall appearance of hurt and yet the cause externall and the propper subject of Chirurgie.[115]

It was an interpretation which angered and frustrated the physicians, and it is interesting to note that, in spite of legal disclaimers to the contrary in 1699, physicians did not deny the fundamental validity of the claim. We know, fumed the President of the College William Eccles in 1707,

> the most part of Diseases incident to Humane /sic/ Bodies /arise/ from External Causes . . . Man by catching Cold falls in a decay, by over-heating himself or Drinking too much falls in a Feaver, by a misfortune of a Female Friend catches a Clap, a Pox or so, by riding in a Rainy day gets Rhumatism, or an Angina . . .[116]

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[114] Ibid.

[115] Ibid.

[116] Wm. Eccles Historical Account . . . op. cit. 1707, p. 24.

but to cede all this to the surgeon-apothecaries, he continued, would leave the physician nothing to do but "sit and Pick his Teeth at home."[117] He obviously considered such a physiological construct frivolous.

It was not a frivolous proposal, for two reasons. Firstly, in their original charter of 1505, surgeons had been given a monopoly over the study of astrological signs and observations. We know that during the course of the seventeenth century judicial astrology was discredited, but at the same time it is clear that in natural astrology there lingered an assumption of "partially understood cosmic influences and rhythms" which, in the case of Sydenham, for example, was applied to seasonal observations of epidemics.[118] The Incorporation of Surgeon-Apothecaries' insistence upon the integrity of the idea of external causation of disease could well indicate the remnants of astrological conceptions.[119]

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[117] Ibid.

[118] H.G. Dick "Students of Physic and Astrology; A Survey of Astrological Medicine in the Age of Science" Journal of the History of Medicine and Allied Sciences I (1946) pp. 300-315 and 419-433, p. 302.

[119] ". . .during the long period of scientific development before Sir Isaac Newton promulgated the universal law of gravitation, there had been generally recognized and accepted another and different universal natural law, which his supplanted. And that universal natural law was astrological." Lynn Thorndyke "The True Place of Astrology in the History of Science" Isis 46 (1955) pp. 273-278. For a further study on this theme see C. Webster From Paracelsus to Newton: magic and the making of modern science C.U.P. 1982.

The other thing to consider is that it is most unlikely the surgeon-apothecaries were attempting to assert the kind of exclusive, either/or policy of which Eccles was afraid. It is more likely that they were attempting to state in physiological terms what they stated politically in 1707; that an infinite number and variety of circumstances contributing to human illness, in addition to those arrived at through precise delineation of immediate causal relationships. It was an attempt to articulate a theory of disease aetiology which incorporated social and environmental factors, a construct which could catch in its intellectual net the kind of quasi-medical concerns linking natural, moral and medical precepts which were discussed in the previous chapter.

The cosmic nature of this construct rules out the possibility that we are going to be able to document it in precise terms. We do not know enough about the medical practice of individual surgeon-apothecaries at the turn of the eighteenth century to do more than we have. By the 1730's we can, however, with more confidence recognize in Edinburgh a close identification being made of nature as moral teacher. The surgeon-apothecary George Young can be found, for example, explaining to his students that "the Invariable order of nature" came as close to the expression of absolute truth as it was possible to do:

". . . and whether you Call this absolute certainty or not its such as we Depend upon in every circumstance of Life and Such as yet never faild any Body or Disappointed them."[120] To see the sun rise every morning was to be witness to the "constant and certain order since the world began" and "if we will make use of such certainty as is to be had /it/ is sufficient to Direct our conduct throughout our Life."[121]

George Young (? -1757)[122] is a significant, and neglected, lecturer in medicine in Edinburgh in the 1730's. By that date he was conducting medical classes of sufficient scope to produce student lecture notes of 500 pages. His students included John Boswall (1710-1780),[123] Robert Whytt (1714-1766),[124] to whom the lecture notes belonged, and Sir

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[120] Archives - R.C.P.E. "Mss. Lectures of George Young 1731-1734" in "Papers of Dr. John Boswall", p. 439.

[121] Ibid.

[122] Admitted Freeman to the Incorporation of Surgeon-Apothecaries in 1719, he obtained an M.D. from St. Andrews in 1736, and L.R.C.P.E. in 1737. He is the author of A Treatise on Opium London 1753.

[123] Arts and, later, medical student at Edinburgh, 1725-1732. Apprentice to surgeon-apothecary John McGill 1729-1732. M.D. Leiden 1736. Entered Incorporation 1737; "by the advice of friends was to discontinue the practice of surgery and pharmacy 1748 and enter the College of Physicians." Uncle of James Boswell.

[124] Second son of Robert Whytt of Bennochie, advocate. Educated at St. Andrews. Succeeded to family estate 1728. Studied medicine at Edinburgh 1730-1734. Subsequently studied

John Pringle (1707-1781).[125] Young was a Rankenian,[126] which distinction places him amongst that vanguard of Scottish philosophers enigmatically referred to by Wallace as having pushed Berkeley's "singular tenets all the amazing length to which they have been carried in later publications".[127] More prosaically we learn that Young was "a great Sceptic in Medicine (and empirick) as well as in every other thing . . . /he/ endeavour'd by all to establish empiricism."[128] We will return to George Young's lectures later; here the purpose is to note his observations regarding the didactic

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under Cheseldon in London, Winslow in Paris and Boerhaave in Leiden. M.D. Rheims 1736. M.D. St. Andrews 1737.F.R.C.P.E. 1738. In 1747 he was appointed Professor of the Institutes of Medicine in Edinburgh university.

[125]Younger son of Sir John Pringle of Stichel, Roxburgh. Educated abroad and at St. Andrews. Studied medicine in Edinburgh 1727, M.D. Leiden 1728. Practiced medicine in Edinburgh and in 1734 was appointed Professor Pneumatics and Moral Philosophy. 1742 appointed physician to military hospital in Flanders under Lord Stair. Served in Low Countries, Scotland and Flanders under the Duke of Cumberland in the 1740's. Settled in London 1750. His most celebrated work is Observations on the Diseases of the Army London 1752.

[126]For a discussion of the Rankenian society, founded in 1716, see N.T. Phillipson "Culture and Society in the Eighteenth Century Province . . ." op. cit. 1974.

[127]"Memoir of Dr. Wallace" Scots Magazine Vol. XXXIII July 1771, pp. 340-341.

[128]"Mss. Lectures of George Young" op. cit. p. 1.

powers of nature.

It was a message Alexander Monro passed on to his children. In a written exercise he gave his daughter, probably in the early 1730's, on conduct and manners, he told her to shun "metaphysical distinctions" and recognize "how conformable revealed Religion is to the unalterable law of nature."[129] John Boswall got similar advice. After leaving Edinburgh in the early 1730's he experienced "what Divines call the Deeps."[130] A friend gave him some lines attributed to the father of Principal Carstares:

> Where fields abound with Treasures hidd
> And pearls of greatest Price
> Oh but the Divine Scriptures be
> An Excellent Device
>
> Wherein God's wisdom manifold
> Itself doth clearly show
> In suiting them to Times and Things
> As if't were writt just now.[131]

Monro's advice to his daughter was focussed wholly on guiding his daughter's conduct to make her aware that virtue and moderation were synonymous; he impressed upon her the necessity of economy, moderation, sobriety and good management of all her affairs, and particularly of her passions. His advice leaned heavily on the belief that her own rational assessment, and common sense, should

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[129] /A. Monro/ "Essay on Female Conduct", n.d.

[130] "Papers of Dr. John Boswall" op. cit. p. 18.

[131] Ibid.

dictate her behaviour; what was right in one situation was not necessarily right in another. "We ought", he told her, "to imitate everything morally good so far as our Circumstances can allow."[132]

In Monro's own conduct, we find the same attention to self-regulation, and again the implications for medical therapy are clear. His life, like that of Sir John Clerk, was a constant exercise in moral righteousness. He had obviously been taught from an early age of the dangers of intemperate living,[133] and after an illness of his own in his early twenties (unspecified), he became convinced of the medical benefits of extreme abstinence, "so sensible of the Serenity and Agreeableness of a sober life",[134] that for the rest of his life he was never tempted "to live in the ordinary full way, avoiding clubs and company where there was likely to be heavy drinking and eating."[135] He attended, however, "with Pleasure" clubs such as that organized by President Forbes, where each week he entertained Monro, Dr. John Clerk (Sir John's nephew) and Colin McLaurin to a "philosophic Feast", where apparently the knowledge

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[132] /A. Monro/ "Essay on Female Conduct" op. cit. n.d.

[133] Monro Autobiography op. cit. pp. 102-03.

[134] Ibid.

[135] Ibid.

consumed was inversely proportional to the victuals. While "discussing freely most sciences and parts of Literature" and arguing over medical and legal matters, "Dr. Clerk had some Bread and Whey, P.M.'s Dish was boil'd Spinage with a little very small Beer, the President had a small Fish with a Glass of White Wine mixed with three or four times as much water, and before Mr. MacLaurin a Stake or a Chop was placed with Wine or Beer as he chused."[136]

Alexander Monro was also interested in exploring the relationship between climate and disease. It seems likely, for example, that his Medical Essays, developing as they did along the lines of reporting largely on the unusual and untypical, was not what Alexander Monro had hoped for. In the introduction to the first volume, where he outlined the kind of questions he wanted to see answered, he assumed an association between the seasons and disease, a fact he declared "absolutely necessary" for understanding epidemic disease.[137] He would like to see discussed, he wrote, the relative merits of two theories regarding the constitution of the environment: Hippocrates' idea that it was the air itself which caused epidemic disease, or Sydenham's belief that epidemics were the result of "some undiscovered Quality of the Air, and not upon any of the sensible Changes

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[136] Ibid.

[137] Medical Essays and Observations . . . op. cit. 1733-44, Vol. I Preface.

in it."[138] A second factor, he declared, was understanding that disease was dependent upon Constitutions, and he wanted to discover what characteristics encouraged disease. None of these questions were pursued by contributors, although the first volume dealt with the medical topography of Edinburgh, and each volume opened with a section on meteorological observations.

The kind of work Alexander Monro failed to generate amongst his colleagues began to appear, however, from another source. We can see the question of disease and environment being pursued more substantially from the middle of the eighteenth century in a number of publications written by military medical men who had studied in Edinburgh, some of this work being adaptions of dissertations, and which focussed on the medical implications of environmental questions. They were either empirical studies of the physical conditions and customs of the societies amongst whom these medical officers worked,[139] or collections of

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[138] Ibid.

[139] George Cleghorn Observations on Epidemic Diseases in Minorca 1744-1749 Edin. 1751; Alexander Russel Natural History of Aleppo Edin. 1756; Dr. James Grainger Historia Febris Anomalae Batavae in Years 1746, 1747, 1748 and 1749 Edin. 1753; John Millar Observations of the Prevailing Diseases in Great Britain Lond. 1768 /Translation of his Edinburgh medical thesis 1757 "De Lochiorum fluxu immodico"/; James Lind M.D. "De Febre remittente in Bengalia 1762" Edin. med. thesis 1768.

observations on possible causes of disease in military camps and on board ship, with particular attention being paid to such questions as food, atmospheric conditions and liquor consumption.[140] The most influential of these works was Sir John Pringle's Observations on Diseases of the Army (1752). The book is most noted for its observation that hospitals were a principal source of infectious disease, and for the advocacy of antiseptic practices. These observations, however, were only part of an extensive outline of all the social conditions considered to predispose men to sickness.[141] Pringle recommended such measures as the prohibition of marching during the heat of the day, the encouragement of early morning exercise and shorter sentinel duty during hot weather. He also recommended a supply of great-coats, blankets and adequate fuel during cold weather, digging trenches around tents to drain away ground water,

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[140]Francis Home M.D. Medical Facts and Experiments Lond. 1759 /part of which was a translation of his Edinburgh medical thesis of 1750 "De Febre remittente" being case records of his work as surgeon of the Greys in Flanders 1743-48./ Sir John Pringle Observations on Diseases of the Army Lond. 1752; James Lind M.D. A Treatise on the Scurvy Edin. 1753.

[141]Pringle had been working along similar lines in his Observations on the Nature and Cure of Hospital and Jayl-Fevers in a Letter to Dr. Mead Lond. 1750, and see also his address to the Royal Society "Of Several Persons Seized with the Gaol Fever, Working in Newgate; and of the Manner in which the Infection was Communicated to one Entire Family" 1753.

sufficient straw for bedding, frequent airing of tents, punishment for men relieving themselves anywhere but in authorized places, adequate drying of wet clothes, frequent moves of camp, especially when dysentry prevailed, and the avoidance of General Hospitals especially during periods of epidemic.

Much of the significance of the work of these men lay in the fact that the introduction of social and environmental measures into military medicine was accompanied by, and in fact demanded, preventive medical practices. Most of Pringle's recommendations demanded preventive measures, and we can see James Lind[142] thinking along the same lines. Turning his attention in 1757 to more general methods of preventing sickness, after convincing himself in A Treatise on Scurvy (1753) of the importance of a correct diet for seamen travelling long distances, "It may be worth observing," he wrote,

> that the prophylactic or preventative Branch of medical science does, in many Instances, admit of as much, or even more Certainty, than the curative Part. For it would be easy to demonstrate, that the Rules, for the Preservation of Health and Life, in many singular and dangerous Situations, are founded on clear and self-evident principles. They are often the natural Dictates of Sense and Appetite approved by Reason, and established by Observation.[143]

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[142] James Lind M.D. (1716-1794) M.D. Edin. 1748. Lind entered the navy in 1739 as a surgeon's mate, after studying medicine in Edinburgh. He made his experiments with citrus fruits on scurvy victims in 1747.

[143] James Lind M.D. An Essay on the Most Effectual Means of Preserving the Health of Seamen Lond. 1757, Preface pp. xi-xii.

Such an approach to military medicine was nothing short of revolutionary. The work of men such as Cleghorn, Pringle and Home, wrote a reviewer for The Edinburgh Medical and Surgical Journal in 1833, "threw so much new light on the causes and treatment of the diseases incident to warlike operations, that not only was the whole science of medicine improved, but its application to the exigencies of the military life began to acquire more importance, and create more general interest in this country than heretofore". These men and others like them, he wrote, revolutionized medical opinion, and henceforth those who ". . . undertook to cultivate the knowledge of this department, found it indispensable to modify all their previous ideas by referring to the observations and experiences of the English /sic/ physicians."[144]

The study of disease from an environmental perspective involved more than a knowledge of nature, however. It has been well noted that the assumption outlined by Glacken already referred to, that the environment could serve an important function in determining the health, character and government of men, was associated with the development of a sensualist epistemology and the study of the nervous system.[145]

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[144]"History of Military Medical Publications" The Edinburgh Medical and Surgical Journal 1833, p. 450.

[145]C.J. Lawrence "The Nervous System and Society in the Scottish Englightenment" in B. Barnes and S. Shapin (eds.) Natural Order . . . op. cit. 1979.

As a "reactive organism", the nervous system and the organs of sense could be the means of communication between man and the external environment. If we look at the examinations of new members by the Incorporation of Surgeon-Apothecaries for the period 1709-1737 we see that indeed questions relating to the nerves and muscles, the organs of sensation and bodily functions played a significant role in topics presented by masters on these occasions.[146] Many of the discourses were concerned with wounds, fractures, ulcers and the surgical treatment of these conditions; many too, however, were concerned with actions and functions of the body, anatomical descriptions of bodily processes, and many of these processes concerned the organs of sensation. Discourses were given on "the eye", the "muscles", on "external agonts /sic/ of the body", on "the use of the muscles of the lower belly", on the "ear", on "wounds of the nerves", on "muscular motion", on the "sense of smell", "on generation", on "midwifery", "nutrition", "respiration", "secretion", "on the sense of seeing", "on the eye and vision", "on digestion", and "on the animal oeconomy".

We can say nothing about the use of this subject matter, except to record this anatomical interest in the nerves, muscles, and organs of sensation. The surgeon-

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[146]The content of examinations are briefly entered in the Minute Books, usually listing the topic of discussion and the name of the lecturer, i.e. "John Knox discoursed on the bones."

apothecary in Dalkeith, however, had in his possession a treatise which clearly came within the compass of interest in functional anatomical processes in general and the operation of the nervous system in particular. Into his case book he had transcribed a piece entitled "Simpathia, or the History of External diseases by consent of parts."[147] It opens with the observation that "An exact and accurate knowledge of the Structure & Oeconomy of the several parts of the human body, & of the Influence each particular part has on another, is the principle foundation both of medicine & surgery. For if one thoroughly knew", it continued,

> the proper and peculariar function of each particular part, & the connection or influence every one has on another, it will be easy to determine the effects that will result in every part upon the application of any known cause to any determin'd place. and on the other hand it will not be difficult from the effects that appear to our senses in any place, to rise into the seat of the cause that produced them, how farr soever it may be from the place of their appearance . . .[148]

Such a method of reasoning distinguishes the "Rational Physician, /who/ proceeding from things that are visible

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[147] "Case book of unknown surgeon-apothecary" op. cit. 1732-35, pp. 55-57. The piece was subsequently published in Medical Essays op. cit. 1733-44, Vol. V. Pt. II "Practical Remarks on the Sympathy of the Parts of the Body, by the late Dr. James Crawford Professor Medicine in the University of Edinburgh" pp. 480-90. As far as is known, Crawford taught only chemistry during his period of activity as a professor of medicine, from 1713 until the early 1720's. He may have been actively involved in the early teaching enterprise of Monro and Alston.

[148] Ibid.

into those that are hid, discovers where & how to apply his remedies."[149]

The essay concentrated upon the visible. It was necessary to know thoroughly the function of parts and the relationships between them, it argued, because "oftentimes the effects appear in one place, while the source or real cause lies in another far distant or remote part communicating or consenting with one another by the intervention of long nerves & muscles."[150] A part in reality whole and sound "may be pain'd and lose its motion", and therefore

> for penetrating . . . into the distant & latent source of such diseases we must be well acquainted with the origin, course, insertion & motion of every muscle, & with the origin, communication & distribution of the nerves that belong to every part.[151]

It was knowledge of this sort, the essay continued, which "makes the great difference betwixt a knowing surgeon & an ignorant mountebank or barber, "for the one thinking every disease has its seat where the effects appear attempts to remove the shadow while the body remains, & loses the time by fruitless application of medicines to a sound part, whereas the other knowing the fountain of the malady plys it in its proper place, & plucking it out by the roots soon by the same remedys setts all to right again."[152]

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[149] Ibid.

[150] Ibid.

[151] Ibid.

[152] Ibid.

Although thus asserting that this knowledge was useful for both physician and surgeon, it is clear from the context that the remarks were intended primarily for the assistance of surgical practice in the treatment of topical, observable disease phenomena; the illustrations were to serve as "a foundation for others of the same kind, & /to/ serve to explain many strange Phenomena in outward diseases little taken notice of by any other."[153]

Another contribution to the study of the nerves and muscles can also be found in the 1730's, this time in the lectures of George Young. Young's lectures show him to have been concerned with all aspects of medical practice. They included numerous case histories, organized around an attempt to define the disease in terms of its causes and symptoms and including relevant observations from the work of authorities such as Boerhaave, Sydenham, Fuller and Dr. Simpson (professor of medicine at St. Andrews). Young also discussed midwifery, made observations and described some of the more commonly used drugs and minerals, i.e. opium and mercury, offered directions for patients taking the Moffat Waters, included some physiological observations, i.e. on digestion, muscular motion, sensation, and offered some remarks on Boerhaave's Institutes. His case histories included most common illnesses; i.e. smallpox, gout,

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[153] Ibid.

rheumatism, phthisis, jaundice, pleurisy, dropsy, melancholy, madness, etc. To a large extent his remedies were fairly standard; he prescribed bleeding, vomiting, purging, and emetics, but he also frequently dismissed the efficacy of any medicine and instead recommended the kind of "natural" remedies, such as "cooling", a diet regimen, riding and cold bathing, we have already discussed.

Generally, the governing principle behind Young's collection of lectures differed little from those of his contemporaries. It was essentially eclectic; random treatments were suggested with little attempt to rationalize the use of any particular remedy, beyond the fact that "so-and-so" had found it useful. We get a sense of the general, confused arbitrariness in which medical diagnoses were made in such observations as that made on the treatment of "Pleurisy". "All volatile spirits and salts", Young informed his students,

> are commended by most of our Edinbrugh /sic/ physicians, but on the other hand condemned by Boerhaave and his followers; Indeed in my Judgement they should be very sparingly given. Spermaceti dissolved in the yolk of an egg is reckoned to be a very good medicine in this case; and the juice of millepedes is what almost every body commends.[154]

At the same time, however, it is clear that Young was trying to impose some order onto the chaos. We can see it in his

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[154] "Mss. Lectures of George Young" op. cit. p. 77.

assessment of many remedies in terms of their power to stimulate the bodily functions, and we can see it even more clearly in his essays on sensation and muscular motion.[155]

In his essay on Sensation Young began with the known. One thing we are sure of, he said, was that "the nerves are the Instruments of motion and sensation, some way or other."[156] No-one knows precisely what that means, he continued; was the instrument a liquid, a vibration, or "is it by another mechanism?" All we know, he reiterated, is that when a nerve is compressed, the mind has a sensation. "And Perhaps", he continued, "this is as particular and constant a Law as that the Loadstone always attracts Iron . . . ."[157] The discussion then degenerated into a confused enquiry about where this general law could be taken, into what larger general scheme of things it could be located. Difficulties would remain, he believed, "as long as we cannot find any General Law of bodies into which this particular one can be Resolved (for to explain the mechanism of any particular Phenomena is to reduce it to some common General Law of Bodies own'd to be such By every Body)."[158]

Young would not be drawn into explanations which

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[155] Ibid. "Of Sensation" pp. 667-75; "Of Muscular Motion" pp. 431-56.

[156] Ibid. p. 467.

[157] Ibid. p. 468.

[158] Ibid. p. 470.

continually sought to explain mechanisms in terms of other mechanisms since, he argued, by whatever explanation we try to account for sensation we eventually arrive at "some inexplicable Phenomena." He was looking for an explanation, he said, which would satisfy what was known; "it would not be absurd", he offered, "to say that perhaps there is no other mechanism in our sensations but upon any Impression on the nerves such an Idea is connected or Excited."[159] The essay offered no solutions of the questions raised, however; we get a sense of Young's frustration towards the conclusion, where he contemplated all the various factors to be taken into consideration in considering the question of sensation. Whoever considers "the Innumerable Difficultys arising from the Like Phenomena", he declared, "will be in Danger of Scepticizing."[160]

The essay on muscular motion presented a more confident intellectual position. The sense of confusion and frustration were gone, which leads to the opinion that this essay was composed at a later date. Young offered a thesis on "Muscular Motion" to the Incorporation of Surgeon-Apothecaries as part of his examination for entry in 1719,[161] although we do not know how similar the two versions were.

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[159] Ibid. p. 471.

[160] Ibid. p. 475.

[161] Surgs. Mins. May 20 1719.

It seems likely, however, that the Incorporation continued to provide a forum for radical medical opinion.

In his essay Young again began by asserting what was known, which apparently at that time consisted of a consensus that some liquid in the nerves was a prime agent in activating muscular movement. However, it was apparently also agreed that in voluntary muscular motions, the act of the will was the ultimate cause, but not a mechanical cause, "which are all perceiveable by our senses . . . ."[162] There was also agreement that "the will must make use of some Instrument to Dilate the muscle . . ."[163] but at that point agreement ended and Young began to examine current theories. He took it for granted, he wrote, that everyone was looking for a "mechanicall cause," i.e. "some sensible Phenomenon," but he argued that no-one currently writing on the subject pretended to have seen it. "Keil never saw the attraction of animal spirits", he argued,

> nor Mayow his nitroaerious and nitrosulphureous spirits, whoever saw Bernouilli's spicula spiritum animalium breaking the Globules of Blood . . . nobody ever saw the struggling betwixt the acids and alkali's in the Blood . . . Nor does Willis Pretend to have seen the Bloody fray that he supposes in the Belly of the muscle in the time of every contraction; The great Boerhaave himself never saw his greater Influx of the animal spirits by which he accounts for muscular motion.[164]

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[162] "Mss. Lectures of George Young" op. cit. p. 431.

[163] Ibid. p. 432.

[164] Ibid. p. 434.

What do they all mean, asked Young? They certainly made no contribution towards understanding the means by which the will caused the motion of the muscles. "Are we not", he persisted, "Inquiring after a Sensible Phenomena which always preceeds the Dilation of the Belly of the muscles and is so Inseparably connected with it that the one is never seen without the other? And are Sensible Phenomena to be Discovered any other way than by our Senses? Are Blind men Capable of Learning painting or a Deaf man musick?"[165]

Young continued by examining the argument that all knowledge was not derived from sensible perceptions, i.e. knowledge of the circulation of the blood, and all future predictions, such as the rising of the sun, were derived by Reason. He rejected this, arguing that

> some of the Phenomena of Bodys are so Inseparably connected together that we never see one without the other, e.g. we never saw a Body without a support but it always fell Downwards we never put our finger in the fire but we always felt pain, we never see objects while our eyes are shut and this is the constant Invariable order of nature which we Presume will Continue . . . and whether you Call this absolute certainty or not its such as we Depend upon in every circumstance of Life.[166]

Young instructed his students not to waste time imagining and hypothesizing about mechanisms they could not see; "there is no Infinite Series of mechanicall Connections",

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[165] Ibid. p. 435.

[166] Ibid. p. 438.

he said, "and if we Dont stop our Enquirys where the sensible Connections end, we may . . . pursue invisible mechanisms ad infinitum."[167] How do we know, he asked, that causes beyond our perceptions operate according to mechanical principles? How do we know that they are any other than the will of God, "for as we said before mechanicall connections are finite, and must at Last terminate in the first cause."[168]

The question of purpose in natural order clearly had a significant place in the minds of the members of the Edinburgh medical community in the early eighteenth century. How many others saw as Sir John Clerk did that that purpose was divinely inspired is not clear, but by the early 1730's nature was clearly seen by some influential members of that community to be endowed with didactic powers addressing questions of moral conduct. In consciously adopting Boerhaave as the text upon which their medical lectures were based, however, Alexander Monro and the professors of medicine would appear to have been making a point about the separation of the study of nature into

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[167] Ibid. p. 443.

[168] Ibid. p. 445.

two, on the one hand for medical and on the other for theological purposes. Alexander Monro confined considerations of personal piety and virtuous conduct to a relatively separate stream of consciousness. The separation of medical and moral questions is easier when anatomical and physiological structures and the chemical composition of substances are studied as discreet intellectual problems. In studying the practice of medicine such a differentiation is more difficult, although placing patients in an Infirmary obviously helped narrow the focus of pathological enquiry.

The practice of medicine, the day-to-day social encounter with patients was not confined, obviously, to surgeon-apothecaries, but it was assumed that they handled the bulk of such work. The surgeon-apothecary in Dalkeith worked closely with physicians, but he was the medical attendant on the spot, serving patients' immediate needs. He had to deal with the wide-ranging, quasi-medical problems from which many of his patients suffered. It has been argued in this and the previous chapter that there existed, amongst laymen, surgeon-apothecaries and physicians, an inclination to conflate moral and medical therapies, to find in conforming to natural law ways in which nature concurrently pointed the way to good health and virtue. Because of the nature of the practice of the surgeon-apothecary, such a fusion could well have characterized the

practice of more than the one surgeon-apothecary we have documented.

The association between surgeon-apothecaries and the idea of pre-determined natural law can be documented in another way. In confronting physicians with an alternative physiological explanation of disease aetiology in the 1690's, surgeon-apothecaries were not only asserting the integrity of the practical part of the art of medicine but also proposing the organic, environmental unity of man with nature which Glacken sees as surviving as a restatement of natural theology in the eighteenth century. Accompanying the surgeon-apothecaries' physiological proposition was their anatomical interest in the organs of sensation, the nerves, the muscles and gross functions of the human body, all interests contributing to an understanding of man and his manner of functioning in the natural world. In the following two chapters we will consider how the idea of environmental organic unity between man and nature became full incorporated into medical opinion in Edinburgh.

CHAPTER VII

"THE SLOW CONSENTING ACADEMIC DOUBT": WILLIAM CULLEN AND INTELLECTUAL SCEPTICISM

> This connexion, therefore, which we _feel_ in the mind, this customary transition of the imagination from one object to its usual attendant, is the sentiment or impression from which we form the idea of power or necessary connexion.[1]

William Cullen did not begin to teach in Edinburgh university until 1754, when he was appointed to the chair of chemistry to replace the dying Andrew Plummer and to correct a situation where, according to Lord Kames,[2] there was "scarce one physician of an considerable character" working in Edinburgh.[3] In 1761 Cullen assumed responsibility for teaching the _materia medica_ when Charles Alston died; in 1766 he was appointed to the chair of the theory of medicine; and in 1773 he became professor of the practice

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[1]David Hume _An Enquiry concerning Human Understanding_ (ed.) L.A. Selby-Bigge Clarendon Press 1955 Sec. VII "Of the Idea of Necessary Connection" Pt. II No. 59.

[2]Henry Home, Lord Kames (1696-1782). Scottish jurist, agriculturalist and philosopher, Ramsay reports he was "considered a sceptic." Kames was a close friend and patron of David Hume and other notable literary figures in Edinburgh.

[3]John Thomson _An Account of the Life . . . of William Cullen M.D. op. cit._ 1859, I, pp. 83-84.

of medicine, a position he held until his death in 1790. In his role as teacher he therefore lies outside the scope of this thesis.

Cullen is being included, however, because his lectures demonstrate the continuation, in a more formal, medical context, of ideas about the nature of ill-health and natural remedies for attaining and preserving health. He made no contribution to knowledge of physiological processes but he provided a general framework to demonstrate how to improve the physical, mental and moral quality of life and, by implication, how to extend life. At the same time, in his sceptical criticism of all natural knowledge Cullen lent his weight to the philosophical arguments shifting power from God to a seemingly ambiguous partnership between man and nature; seemingly, because nothing Cullen ever said denied the concept of design in natural order. Cullen's is a continuation of an organic view of natural order which we have argued existed in early eighteenth century Scottish medical thought and practice; he invoked the power of the environment over human destiny.

Cullen's social background places him well within the tradition we have discussed; from his earliest medical experiences he was familiar with a wide variety of practice, both military and civilian. His academic medical training was conducted at the level of personal direction, and his earliest medical knowledge acquired as an apprentice "on the job", where he

would have had little opportunity of exploring anatomical mechanisms of the body but a great deal of opportunity of learning about human nature and behaviour.

Cullen's early career shows him to have been an enterprising and ambitious man, of modest heritage and financial resources. Born in Hamilton in 1710, the second son of a family of nine, his father was a "writer or attorney," factor to the Duke of Hamilton and proprietor of a small estate in the parish of Bothwell, on the outskirts of Hamilton.[4] Cullen attended Glasgow University in the late 1720's and was apprenticed to John Paisley, a member of the Faculty of Physicians and Surgeons of Glasgow with an extensive practice in Glasgow and a high reputation as a teacher and scholar. At the end of 1729 Cullen went to London, became surgeon on board a merchant ship trading with the West Indies, worked for a while in an apothecary's shop in London, but for family reasons (his father and elder brother had died) he was back in Scotland early in 1732. He began practice as a country apothecary, but a small inheritance in 1733 gave him some financial flexibility, which he used to study general literature and philosophy for a few months with an unnamed dissenting clergyman in Northumberland before spending the winters of 1733-34 and

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[4] All we know of Cullen's early life is contained in J. Thomson An Account of the Life . . . of William Cullen M.D. op. cit. 1859.

1734-35 attending medical classes in Edinburgh. All we know of his sojourn there was that he was a founding member of the student Medical Society.

In 1736 Cullen returned to Hamilton where he established a practice as a surgeon. Taking an M.D. in Glasgow in 1740, he built up an extensive practice and gained considerable eminence. Through the patronage of the Duke of Hamilton he became known to the Duke of Argyle, a contact which held him in good stead when negotiating for his removal to Edinburgh. It was during this period of his life that Cullen took as apprentice William Hunter, and together they projected a partnership--Hunter practicing surgery and Cullen devoting himself to medical practice--after Hunter had completed training in Edinburgh and London. As we know, Hunter did not return from London, but the two remained close personal friends until Hunter's death.

Early in 1745 Cullen moved to Glasgow for the purpose of offering medical classes, and over the next few years virtually created the Glasgow medical school; he offered classes in the theory and practice of medicine, the materia medica and botany, and chemistry. In 1750 Cullen was appointed professor of medicine at the University of Glasgow. Here he became a close friend of Adam Smith, who was appointed professor of logic in 1751 and of moral philosophy in 1752. Cullen and Smith tried to bring David Hume to Glasgow and, although unsuccessful, Hume, Smith and Cullen remained close personal friends. Cullen was Hume's personal physician in the later part of the philosopher's life.

When Cullen moved to Edinburgh, therefore, he already had ten years' teaching experience behind him. He was, like Alexander Monro and William Graeme, a professional pedagogue. He lectured in English, as he had in Glasgow and as Monro was doing in Edinburgh. Cullen, however, was the first professor to teach the subjects more specifically related to the education of physicians--the theory of medicine--in the vernacular. He taught, as we shall see, in the same manner councilled by Graeme; for the purpose of enlightening his students, not for displaying his own scholarship.

When we come to look at Cullen's lectures in detail, we can also see how uncompromisingly Cullen's work lies within the context of the reformed medical ideas we have been discussing. Take, for instance, his approach to scientific methodology. Cullen held essentially iconoclastic inclinations towards any ideas constructed by means other than that which could be substantiated by natural knowledge. In emphasizing the need for empirical studies, Cullen could quite sincerely welcome all opinion: "Chemists, Sylvius, the Cartesians, the Mechanicians, the Stahlians, the Hoffmanians have all given facts to be laid hold of" he told his students.[5] He could take from these "schools" what he needed because for him empiricism was not only a

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[5]Archives-R.C.P.E. Cullen mss. #16 "Lectures on Physiology" 2 vols. c.1766, vol.I lesson 8.

methodological tool, it was also his doctrine. For Cullen, analogy was the essential form of reasoning, not induction. Listen to him defend dogmatism at the same time that he encouraged empiricism by arguing that the reasoning process was a constant exercise in analogy. "The whole of our reasoning", he told his students,

> consists in applying generals to particulars and finding that particulars have properties that allow them to be comprehended under a general property. [A]nd this is analogy depending upon Induction so much spoke of in modern philosophy...Induction is at present the foundation of every dogmatical conclusion... The excess of dogmatism is Hypothesis that is general facts or properties assumed without Induction or more commonly on too Slight Induction.[6]

Cullen would have described himself as a "dogmatical empiricist", a contradiction in terms well suited to his scrupulous intellectual scepticism. As we shall see, in a manner identical to David Hume, Cullen suspended judgement on generalizations at the same time that he continually used them. It was the authority of the metaphysical he rejected; empirical authority, i.e. generalizations derived from analogous reasoning, were acceptable. He told his students not to worry about the opinions of those of "Berkeley and sceptics persuasion" that there were no external realities; "it is enough that we unavoidably suppose and conclude it . . ." he reassured them.[7]

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[6] Ibid.

[7] Cullen mss. #18 "Lectures on Physiology" 5 vols. c.1770, II p.100. In regard to Cullen's scepticism see J.R.R. Christie

"Dogmatic empiricism", then, was the framework into which Cullen inserted his medical "facts". And what of these facts? Another reason Cullen exhibited such uncharacteristic professional charity towards his international colleagues was because physiological research was almost irrelevant to his physiological system. Cullen's interests lay in human functions, human behaviour, not in anatomical mechanisms. Part of his antipathy to Boerhaave lay in the association of the latter's name with a mechanistic physiology which paid no attention "to the primary power by which /the animal oeconomy/ moved."[8] As has been pointed out, Cullen found in the study of the nervous system the most fruitful avenue for such study.[9] His criticism of Boerhaave quoted above continued ". . . we must trace every Function of the Body to the general laws of motion in the system; and we shall find that these are in the nervous system and therefore that it is a fundamental study in the

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"Ether and the science of chemistry: 1740-1790" in G.N. Cantor & M.J.S. Hodge (eds.) Conceptions of the Ether C.U.P. 1981.

[8] Cullen mss. #18 op. cit. I p.199.

[9] Cullen's adoption of the neural physiology is discussed in J. Thomson An Account of the Life . . . of William Cullen M.D. op. cit. 1859, vol.I pp.195-200. More recently, see C.J. Lawrence "The Nervous System and Society in the Scottish Enlightenment" in B. Barnes & S. Shapin Natural Order . . . op. cit. 1979, pp. 19-40, where he argues that Robert Whytt is the seminal figure in the development of neural physiology in Edinburgh. I would not wish to argue with this, but merely to propose that Cullen developed, simultaneously, "another" physiology.

oeconomy."[10]

The nervous system lay at the centre of Cullen's general physiological system, and he made due acknowledgement of prior "discovery" /my italics/ to Hoffman.[11] To see his use of the nervous system, however, as an intellectual offspring of anatomical studies deriving from Robert Whytt, however,[12] is to divert from Cullen's essential purpose. He always played down the significance of knowledge of particular anatomical structures. He would not go into detail, for example, about the anatomy of the eye, but would instead discuss its function.[13] Again, the nerves themselves, he said, "are merely channels of communication" and hardly deserved particular study.[14] He was particularly dismissive of corpuscularian theories of activity affecting the fluids. He went to great lengths to dismiss, one by one, Gaubius' theories regarding the loss of cohesion, the state of acrimony, the loss of water, etc., of the blood,[15] concluding "/t/herefore, once for all . . .

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[10] Cullen mss. #18 op. cit. I p.199.

[11] Ibid.

[12] See C.J. Lawrence "The Nervous System . . ." op. cit. 1979.

[13] Cullen mss. #18 op. cit. I p.248.

[14] Ibid. p.249.

[15] Ibid. IV lecture 87 pp. 209-223 and lecture 92 pp. 287-299.

I say that the whole of this Corpuscularian Philosophy is entirely to be banished from our Chemistry and Physiology."[16]

Cullen's use of a neural physiology had nothing to do with the anatomically-based physiology of the mechanistic school. He was concerned only to convey knowledge of the gross functions of the human body, and to show how this was accomplished by the nervous system. And he had little use for any physiology not devoted to the specifically utilitarian end of illuminating patterns of disease. Listen to his use of language in evaluating the use of physiological research. Physiology was both interesting and important, he told his students,

> even considered as a piece of pure speculating with regard to the mechanisms of animal bodies; but, when considered as capable of a very useful application, it becomes a subject of the greatest importance, and this application is to explain the nature of the diseases of the body; and to explain the operation of Remedies and thereby to lead to a more certain means of curing diseases, than we could otherwise obtain.[17]

All Cullen's scientific work was devoted to uncovering resemblances and functions in the natural world, not searching for ultimate essences. He was not looking for scientific truth; he was looking for parallels

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[16] Ibid. p. 295.

[17] Ibid. p. 1.

between natural phenomena and human behaviour in health and disease. He produced a general theory outlining the interrelationships between natural law,(which of course does not mean "primitive" law) virtuous conduct and health. Essentially he taught that health could most successfully be achieved through the acquisition of strength of body and strength of mind. These powers, he believed, were within the capacity of most men who had the means and self-discipline to live an active, but temperate and moderate, life. Much of his therapeutics, as we shall see, was an invocation of common sense maxims and practical observations on the elements of physical health and strength and the means of preserving them. He had little interest in most medicinal remedies, but concentrated instead upon explaining how powers within the natural environment, and powers within man himself, could protect men from disease and support health.

The mechanisms by which Cullen arrived at these ideas is impossible to document; we simply don't know enough about Cullen's early years. What little we do know suggests that his general principles had been formed early. For example, of his experience as a ship's surgeon Cullen's biographer tells us that

> [t]o a mind like his, every change of situation was calculated to afford instruction. In this voyage he had an opportunity of seeing new scenes of life, and manners different from those he was accustomed to contemplate at home; and what was to him of greater moment, an opportunity of

> observing the general effects of diversity of climate on the human constitution, and of marking the symptoms and progress of some of the diseases which prevail on our West Indian settlements, and which in particular seasons prove so highly fatal.[18]

We do not know whether these observations are based on actual documents or on hindsight, but the wording does suggest that Thomson had some specific source from which he drew these comments. If this is the case, then it suggests that Cullen had been taught very early to appreciate the importance of environmental influences on health. Theological implications of studying natural phenomena may well have been one of the items of discussion with the dissenting clergyman he visited in the summer of 1734. Cullen certainly held religious principles not entirely orthodox, because it was he to whom William Hunter turned in 1737 as an alternative to his intended plan of entering the church; Hunter had doubts regarding "some of the articles of faith which, as a clergyman, it would have been necessary for him to subscribe",[19] and Cullen, apparently, convinced Hunter to forget ordination and take up medicine.

The importance of the nervous system, and sceptical criticism of unsubstantiated scientific theories could have

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[18] J. Thomson An Account of the Life . . . of William Cullen M.D. op. cit. 1859, vol. I pp. 5-6.

[19] Ibid. p. 13.

been developed by Cullen initially during his stay in Edinburgh during the winters of 1734 and 1735, whatever acknowledgement Cullen made of his debt to Hoffman. As we have seen, the nervous system was being explored for the light it could shed, unencumbered by non-substantive terminology, upon human motion in the early 1730's. In view of the parallels which can be drawn between the lectures of George Young and the later writings of David Hume and William Cullen, all of whom were in Edinburgh teaching or being taught in the late 1720's and early 1730's, one can perhaps speculate that Cullen was a participator in a common concourse of ideas around this period which has never been adequately documented.[20]

Further weight is lent to the idea that Cullen moved in iconoclastic medical circles from his earliest medical days is provided by our knowledge of his involvement in the student Medical Society. Cullen was instrumental in organizing this society in 1734 and 1735,[21] and virtually all we know of its initial conformation is the enigmatic statement made by the then President, Andrew

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[20]See, for example, the comment of Lord Kames' biographer that "Home may be said to participate in that silent eighteenth century revolution which rejected man's concept of himself as essentially rational and substituted that of the creature driven by appetities whose behaviour was affected by the environment to which he was exposed." Ian Ross Lord Kames and the Scotland of His Day N.Y. 1969.

[21]J. Thomson An Account of the Life . . . of William Cullen M.D. op. cit. 1859, vol. I pp. 9-11.

Duncan, in 1771, that

> At the establishment of this society the system of Boerhaave maintained in Europe a sway as universal as ever that of Galen had done before. But the founders of this institution, while they were far from being the least sensible of the high merit of so great a master, did not hesitate to shake off a blind veneration for his errors. Reason, philosophy, and experiment were their constant and their only guides. By these means, by such men, and in this place, were the foundations of the Boerhaavian doctrine first shaken.[22]

A close examination of Cullen's lectures shows what that rejection of Boerhaave meant.

By the time Cullen was lecturing in the 1760's he had developed a theory of learning that dwelt on the need of his students for positive and immediate gratification, and constant reinforcement. All the values he reinforced were material. He had a genuine enthusiasm for the subjects he taught, and continually tried to "sell" them to his students, always by pointing out the utilitarian value of knowledge and its ultimate reward. Thus, he pointed out that young men were often too little influenced by the distant prospect of wealth and honour--the ultimate justification, in his opinion, for entering an profession--to be particularly diligent or attentive to their studies. It was necessary, therefore, to allure them not only "with the prospect of a happy abode at the end of the journey" but also with inducements "to make the way towards it

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[22] Andrew Duncan Address to the Medical Society Nov.2 1771.

pleasant and agreeable."[23] To his chemistry students he pointed out:

> If a young man delights to have his hands employed in Experiments, Chemistry will find him sufficient exercise. If his Imagination must be amused with uncommon and curious appearances, Chemistry will constantly present them to him. If a man aims at gain and the Improvement of the most useful and lucrative Arts; it is Chemistry that must feed his hopes and give him assistance.[24]

Knowledge with no utilitarian value, and no substantive proof, had no meaning for Cullen. We find him studying chemistry because it was the particular discipline devoted to the investigation of matter. Chemistry was concerned with substance, with the particular properties of matter, and it was this methodological aspect which drew him to the subject. "Natural Philosophy consists of two parts," he told his students:

> the one of which explains the Phenomena depending on the general properties of body and is called the Mathematical or Mechanical Part of Natural Philosophy. The other Part explains the Phenomena depending in the particular properties of bodies and is called the Chemical branch of Natural Philosophy.[25]

On another occasion, he gave them his definition of chemistry; "viz. Chemistry is that part of Natural Philosophy which treats of the particular properties of bodies. . . . No other definition that I know of except this which we have

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[23] Archives - R.C.P.E. Cullen mss. #11 "Lectures on chemistry" c.1755 p. 1.

[24] Ibid. pp. 2-3.

[25] Ibid. p. 1.

adopted, by which to distinguish what properly belongs to Chemistry."[26] He called it "Philosophical Chemistry."

Yet just as Cullen carefully compartmentalized Newtonian physics outside his own particular realm of interest, so also he showed little interest in, was even dismissive of, scientific investigation into the ultimate composition of matter. It was impossible to define ultimate essences, he believed, and therefore chemistry was primarily the study of change, "the art of Combining and Separating Bodies."[27] Like George Young, he rejected the notion of the infinite divisibility of matter[28] and told his students that in considering the objects of chemistry "we must look upon them all as corporeal substances which possess particular properties . . . [and] I shall begin," he continued,

> with laying down the following fundamental principal to which perhaps there are few exceptions in nature; that the Changes of the qualities of bodies produced by Chemistry, are all produced by Combination and Separation. . . .[29]

The bulk of his chemistry lectures were, therefore, discussions of the properties of substances which made them amenable to change, and the various forms that combination could take.

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[26] Cullen mss. #10 "Lectures on chemistry" c.1755 I p. 17.

[27] Ibid. I, p. 60 and Cullen mss. #12 "Lectures on chemistry" 1757-58, p. 31.

[28] Cullen mss. #12 op. cit. pp. 22-23 and Cullen mss. #10 op. cit. I, p. 50.

[29] Cullen mss. #10 op. cit. I, p. 58.

[30] Cullen's chemistry is discussed in full in A.L. Donovan

Chemistry was the first subject Cullen taught in Edinburgh, and we find him applying the same methodology to the theory and practice of medicine. His interest in physiology rested wholly on the phenomena of observable change. The tool he used was a neural physiology largely acquired from the leading physiological researchers of the day. Like them, he articulated a mechanical theory of human motion, and we find in his lectures constant reference to the work of Freidrich Hoffman (1660-1743), George Ernst Stahl (1660-1734), Albrecht von Haller (1707-1777) and Heironymus Gaubius (1705-1780). What he took from each it would be impossible to determine, but it is clear he leaned heavily on the work of Hoffman, who viewed the human body as a machine operating by a combination of the actions of the nerves and muscles,[31] and perhaps even more so on Haller, who concentrated his attention upon the contractile powers of the muscular system and from whom Cullen undoubtedly derived his ideas on the "irritability" of the muscles.

The specific neurological mechanisms Cullen outlined were sometimes obscure, often contradictory and full of uninformed speculation (as was that of all his contemporaries). And Cullen knew it. He was perhaps unique in his acknowledgement

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Philosophical Chemistry in the Scottish Enlightenment Edin. 1975.

[31] See John Thomson An Account of the Life . . . of William Cullen M.D. op. cit. 1859 p. 200.

of the shortcomings of current anatomical knowledge, and in his often dismissive attitude towards specific physiological points at issue. He was, in fact, not particularly interested in the precise structure of, for example, the nerve fibres. Cullen was interested in the processes by which human motion operated, not in the building blocks of which it was formed. In pursuing this line of enquiry, he considered the phenomena of sensation and the operation of the human mind to be the most important considerations. He taught his students that the mind was a crucial factor in an interrelated mechanism consisting of the brain, nerves, senses or "sentient extremities of the nerves" and the muscles, all of which "have a peculiar and intimate connection with one another . . . we name it the Nervous System."[32] Either by means of a nerve passing directly from the brain to the muscle, or as a result of an impression made upon an organ being transmitted to the muscle via the brain, muscular contractions occurred. The intervening operation in the brain--"the operations of sensation, thought and will"--Cullen called the soul or Mind, or "Sentient principle."[33] Twenty-seven of seventy lectures in his course of physiology in the late sixties were devoted to the study of sensation and the action of the brain.

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[32] John Thomson (ed.) The Works of William Cullen 2 vols. Edin. 1827 I, p. 15.

[33] Cullen acquired the term "sentient principle" from Robert Whytt.

The specific content of these lectures is the subject of the next chapter, which focusses specifically on Cullen's perception of the nature of disease and diseased states of the human body from the point of view of a physiology based upon the primacy of sensation, thought and will. Before outlining this, however, we should examine more closely what Cullen meant exactly by the "Sentient principle." It is clear that it was not intended to be taken as a materialistic interpretation of the soul.

Cullen always insisted upon making a distinction between the operation of an immaterial soul and the operation of the physical process, yet he always ended a discussion with the primacy of the body. In some cases this was clearly dictated by professional considerations. Consideration of the mind as an independent, immaterial force was, he argued, a blind alley. "I am willing to admit," he told his students,

> the modification of Gaubius that the mind is ever the beginning of motion in the body; but we must, in physic, entirely abstract from this, for the supposition is admitted to no purpose; and if we ever lose sight of the body as the object of physic, and suppose an action of the mind independent of it . . . we are quite thrown out of our system.[34]

In other cases, he appears to be taking a theological position under the guise of medical tenets. He accepted,

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[34] Cullen mss. #18 "Lectures on Physiology" 5 vols. c.1770, IV pp. 87-88.

he said, that "contrary to a narrow materialism" adopted by a very small number, "the common opinion" acknowledged the existence of an immaterial soul. Yet he insisted it operated according to a "physical necessity." This same "common opinion," he said,

> are far from considering that there is anything left to it as a rational soul, but that the mutual influence of the soul and the body takes place by what may be called a physical necessity; that there is nothing arbitrary in the power of the soul.[35]

Time and again we find Cullen articulating this same duality. If we trace nerves through to their connections in the brain "we find," he said, "that by much the greater part of the muscles of the body do not stir unless there is a certain operation of the mind that we call the will which excites and directs the action of almost every muscular part."[36] However, he then continued by declaring that it was primarily through the organs of sense that the brain was activated to impulse the muscles. ". . . [t]he will may be primary and independent," he continued, "but at the same time we can for the most part very clearly perceive that the will arises in consequence of Sense."[37] He could, and publicly always did, acknowledge an immaterial power, but he was quite incapable of ascribing arbitrary,

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[35] John Thomson (ed.) The Works of William Cullen op. cit. 1827.

[36] Cullen mss. #18 op. cit. I p. 77.

[37] Ibid.

or ultimate power to it. Whatever immaterial power existed in man, it was a power emasculated by human thought and the organs of sense. If James Boswell had tried to pursue Cullen as he did David Hume, the closest he would ever have come to prising out of him a materialistic position would have been ". . . the beginning of motion in the animal economy is generally connected with sensation."[38]

The mechanism of sensation is obviously crucial to an understanding of the operation of the nervous system. That Cullen should make it of primary importance, at the same time that he satisfied himself that he was eschewing "a narrow materialism," could have resulted from his sojourn in Edinburgh. Here George Young was encouraging his students to accept only information sanctioned by the authority of their senses, and here David Hume was a student before retiring to the country and later to France to formulate the sceptical criticism of the acquisition of knowledge published in Treatise of Human Nature.[39] The relationship between the lectures of George Young and those of William Cullen is tenuous. That between Hume and Cullen is much clearer. Whether Cullen acquired his ideas from reading Hume's work, or whether they arrived at their opinions independently from their studies in Edinburgh, the similarity of the philosophical basis is indisputable.

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[38] John Thomson (ed.) The Works of William Cullen op. cit. 1827, p. 27.

[39] E.C. Mossner The Life of David Hume Austin 1954.

Hume was principally concerned with questioning the basic assumption behind the work of eighteenth-century scientists. Conscious of the immutibility of mathematical knowledge, and dazzled by the successes achieved by scientists during the seventeenth century, notably Newton, using empirical methods for ascertaining "laws of nature" governing the physical world, they believed that such empirical methods could eventually produce perfect knowledge of all matters of fact. That is, they felt that the uniformity of all nature could be ascertained and consequently knowledge of the future established with as much certitude as knowledge of the past and present. While accepting that the goal of science was to predict future events--"The only immediate utility of all sciences, is to teach us, how to control and regulate future events by their causes"[40]--in his philosophical writing Hume set himself the task of refuting the possibility of such perfect knowledge. Hume did not deny the empirical method; he merely tried to moderate the extreme claims made for its results.

Perfect and absolute knowledge was not possible, argued Hume, because of the fundamentally irrational basis of the operation of the human mind. The most important

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[40]David Hume An Enquiry concerning Human Understanding op. cit. 1955 Sec. VII "Of the Idea of Necessary Connection" Pt. II no. 60.

relationship the human mind made between physical objects, he declared, was that of cause and effect. . . . /_s_/urely." he wrote,

> if there be any relation among objects which it imports to us to know perfectly, it is that of cause and effect. On this are founded all our reasonings concerning matter of fact or existence. By means of it alone we attain any assurance concerning objects which are removed from the present testimony of our memory and senses.[41]

Much of Hume's work, therefore, consisted of an exploration of the intellectual basis of causal relationships, and Hume came to the conclusion that there were no physical properties of any material "body" which enabled any surmise to be made about its effect. We know something of the superficial qualities of objects, he wrote, but nothing of "those powers and principles on which the influence of those objects entirely depends."[42] We know the consistency and colour of bread, but not that it will nourish us.[43] This "natural power" or "secret power" of bread to nourish and support life was an inference gained from inductive reasoning, but Hume denied that this knowledge was gained by any rational process at all; there was no "necessary connection" made by the human mind in arriving at this knowledge.

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[41] Ibid.

[42] Ibid. Sec. IV "Sceptical Doubts concerning the Operations of the Understanding" Pt. II No. 29.

[43] Ibid.

The idea of necessary connection was, declared Hume, "one of the most sublime questions in philosophy" and none, he considered, "on account of its importance, as well as difficulty, has caus'd more disputes both among ancient and modern philosophers. . . ."[44] The terms "necessary" or "efficient" connection had many synonyms, he wrote--productive quality, energy, power, force, agency--all of them designed to suggest a single one-to-one relationship between cause and effect. Hume denied the claims of those "who have pretended to explain the secret force and energy of forces.

> Upon the whole, we may conclude, that 'tis impossible in any one instance to shew the principle, in which the force and agency of a cause is plac'd; and that the most refin'd and most vulgar understandings are equally at a loss in this particular. If any one think proper to refute this assertion, he need not put himself to the trouble of inventing any long reasonings; but may at once shew us an instance of a cause where we discover the power or operating principle.[45]

For Hume there was no single one-to-one cause and effect relationship, but rather a series of mental associations which could be linear or contiguous, or both, operating through a "gentle force," whereby simple ideas grouped themselves together to form more complex ideas. He likened the association to a family tree, whereby the

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[44] David Hume A Treatise of Human Nature in 2 vols. Lond. 1911, Bk. I Pt. III Sec. XIV "Of the Idea of Necessary Connection."

[45] Ibid.

familial ties grew weaker the further removed the association.[46] We derive our idea of cause and effect purely from experience, he wrote. Often this experience was simple and entirely uniform and constant. "Fire has always burned, and water suffocated every human being," he declared; ". . . but there are other causes," he continued,

> which have been found more irregular and uncertain; nor has rhubarb always proved a purge, or opium a soporific to every one, who has taken these medicines.[47]

Philosophers have not ascribed such inconsistency to any irregularity in nature, "but suppose that some secret causes, in the particular structure of parts, have prevented the operation."[48] This reasoning is wrong, he wrote, and in such cases where the effect is not entirely uniform, we can see how our mind works. In such cases we assess the most probable cause, because

> . . . where the past has been entirely regular and uniform, we expect the event with the greatest assurance, and leave no room for any contrary supposition. But where different effects have been found to follow from causes, which are to <u>appearance</u> exactly similar, all these various effects must occur to the mind in transferring the past to the future, and enter into our consideration, when we determine the probability of the event. Though we give the preference to that which has been found most

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[46] <u>Ibid</u>. Bk. I Pt. I Sec. I "Of the Connection or Association of Ideas."

[47] David Hume <u>An Enquiry concerning Human Understanding</u> <u>op. cit</u>. 1955, Sec. VI "Of Probability" No. 47.

[48] <u>Ibid</u>.

> usual, and believe that this effect will exist, we must not overlook the other effects, but must assign to each of them a particular weight and authority, in proportion as we have found it to be more or less frequent; . . . Here then it seems evident that when we transfer the past to the future, in order to determine the effect which will result from any cause, we transfer all the different events, in the same proportion as they have appeared in the past . . . As a great number of views do here concur in one event, they fortify and confirm it to the imagination, beget that sentiment which we call belief and give its object the preference above the contrary event, which is not supported by an equal number of experiments, and recurs not so frequently to the thought in transferring the past to the future.[49]

The idea of necessary connection, he continued, arose from this process of inductive reasoning based upon a theory of probabilities, being drawn from the observance of the largest number of similar instances of the constant conjunction of certain events. Essentially he was arguing that a "necessary connection" cannot be conveyed by one single agent, and there was nothing in a number of events different from a single one except that after repetition the mind is carried by habit to expect a conjunction. "This connexion, therefore, which we feel in the mind, this customary transition of the imagination from one object to its usual attendant, is the sentiment or impression from which we form the idea of power or necessary connexion."[50]

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[49] Ibid.

[50] Ibid. Sec. VII "Of the Idea of Necessary Connection" Pt. II No. 59.

Necessary connection (or cause and effect based upon inductive reasoning) could not therefore be accepted, according to Hume, as a conclusive premise upon which laws of nature could be defined. Inductive reasoning, by which our knowledge of the present was transposed into knowledge of the future was, he declared, simply a process of belief, a process of mind not based upon any rational foundation whatsoever, but merely the result of custom--"the great guide of human life."[51] "All inferences from experiences" he wrote, "are effects of custom, not reasoning. . . . It is that principle alone which renders our experience useful to us and makes us expect, for the future, a similar train of events, with those which have appeared in the past."[52]

Hume's basic concern was with the epistomological problem of the relationship between ideas, but all his work, and all his reasoning, was based upon the observation of relationships between physical objects, and much of the illustration he used had direct medical overtones. Knowledge of the operation of the human body, of the cause of disease, and prediction of the effects of remedies, was obviously fundamental to Cullen's work. He accepted with Hume that such knowledge was not and could not be absolute, but merely the result of human belief--a fallible emotion

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[51] Ibid. Sec. V "Sceptical Solution of these Doubts" Pt. I No. 36.

[52] Ibid.

largely determined by custom. His acceptance gave to his teaching, and to his own practice, a peculiar diffidence towards inductive reasoning.

Essentially, Cullen had all the optimism which the eighteenth-century confidence in empiricism and inductive reasoning inspired. "In the study of physic," he said, "your chief and most constant attention should be directed to obtaining the facts of physic, without which you cannot proceed at all, and to obtaining on every particular subject the whole of the facts relating to it. . . ."[53] There was to be nothing random about this empiricism, of course. To an active mind he was sure the "history of nature," that is, merely the enumeration of the properties of natural phenomena, would not be enough. "A Physician must not be content with distinguishing the productions of Nature. He must aim also at finding the Causes of most of the Phenomena of the Natural World."[54] This was true for chemistry--"The ultimate end of Chemistry is to learn the causes of particular bodies . . ."[55] and it was equally true for medical investigation.

From these facts general principles on causation could be formed by the process of induction. ". . . /a/lmost the only mode of reasoning which medical discussions admit

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[53]Quoted in John Thomson An Account of the Life . . . of William Cullen M.D. op. cit. 1859, II p. 95.

[54]Cullen mss. #11 op. cit. p. 2.

[55]Cullen mss. #10 op. cit. p. 2.

of," he said, "is what is called the method of Induction; that is, from a number of facts relating to the same subject, as all agreeing in one particular, taken together, to form a general conclusion which we may employ as a principle in our after reasonings."[56] It was the same approach he had applied in his chemistry lectures. "Chemistry," he told his students,

> exercises the memory more than the judgement. Our Business, therefore, must be to relieve this faculty; which must be done by means of order. For this purpose I shall give you the general plan, which I intend to pursue; from which you will gain these two advantages, first you will be directed to it by particular parts, and 2nd you will be able to keep in view the connection of the whole.[57]

His published works were always organized around general principles and organized progression of data, in the same way that he conducted his lectures. In this respect Cullen's publications are a very misleading documentation of his work, because they cannot convey how tentative he always made such generalizations, before an audience of medical students.

Like Hume, Cullen rejected any single one-to-one relationship in assigning causes to natural phenomena. "We are very liable," he warned his students, "to Mistakes in assigning causes for Phenomena, on a supposition that certain

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[56] Quoted in John Thomson An Account of the Life . . . of William Cullen M.D. op. cit. 1859 II, p. 95.

[57] Cullen mss. #10 op. cit. p. 22.

effects and authors are sometimes mistaken in assigning one cause to an Effect, which several conspired to produce." He would not suffer them to be too pessimistic, however.[58] He encouraged them to study scepticism but not, he hastened to add, "an obstinate disbelief of everything and every fact, but that kind of Scepticism which the poet calls 'the slow consenting Academic doubt'."[59]

Cullen also believed, like Hume, that there was no determined relationship in any causal connection. "Our whole process," he recorded in his own lecture notes,

> is in generalizing facts and even in doctrine of Causes and what is more especially theory we know nothing of power and efficiency and know it only as a fact that by contiguity of time and place two circumstances or phenomena [are] constantly connected together.[60]

He endeavoured constantly to convey to his students scepticism for the universal validity of principles obtained by the inductive method. "General principles," he declared, "are certainly very necessary but at the same time very difficult to be established, and always to be received with diffidence."[61] No system was perfect and was not to be received as such; any man who did so was "a fool and by Art a Coxcomb."[62] The foundation of all theories and systems "are unsound and some

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[58] Ibid. p. 31.

[59] Ibid. p. 27.

[60] Cullen mss. #16 "Lectures on physiology" c.1766, Nov. 17 1766.

[61] Cullen mss. #10 op. cit. I p. 30.

[62] Cullen mss. #16 op. cit. lesson 9.

of them from their nature incapable of becoming better."[63] "I am ready," he declared at another time, "everybody must be ready, to acknowledge the imperfection, obscurity and fallacy of this matter considered as a whole, and as a System."[64] Theories were of use only when they were accepted on such terms. He did not exclude his own work from these criticisms; he was constantly telling his students how tentative his own classifications were. Even after teaching chemistry for several years at Edinburgh he still introduced his lectures by deprecating his own efforts. "After teaching for so many years," he reflected,

> it might be supposed that my plan was exactly fixed and sufficiently known; but truly I am yet far from being satisfied with the perfection of my plan, and very certain that it is neither so complete, nor so exactly suited to your purpose as I could wish. It will, therefore, be a long time yet - I hope at least it will be long; for it will only be when the languor and debility of age shall restrain me, that I shall cease to make some corrections of my plan, or some additions to my course.[65]

Cullen's whole attitude towards the accumulation of knowledge was permeated by this philosophical belief in multiple causation and the rejection of the idea of a determined relationship between causal connections. Knowledge, Cullen told his students, was not acquired from any one great individual, but was accumulated gradually by

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[63] Ibid.

[64] Cullen mss. #18 op. cit. I p. 62.

[65] Quoted in John Thomson An Account of the Life . . . of William Cullen M.D. op. cit. 1859 I p. 420.

the contributions of many people as a result of common, shared and sometimes accidental experience. "It seems ridiculous," he told chemistry students when he came to Edinburgh in 1755,

> to refer the invention of any generall Art or Science to one particular person, it is always by the Successive Labours of several Persons that an Art is brought to Perfection, and instead of being able to refer the Origin of any general Art to one particular Person we can scarce tell for certain who Invented any particular Art.[66]

When discussing temperaments, he observed that the ancients had distinguished four varieties, categories generally believed to have been a result of the theory of the four humours. Cullen argued that this was probably untrue, and that the observation of temperaments had more probably been deduced by many people from observation and afterwards adapted to those theories.[67]

While he balked at deference to the authority of general principles, Cullen paid constant homage to the reasoning process itself; ". . . it is reasoning only that can correct false reasoning," he argued.

> It is only by exercise we can become strong, dextrous and exact. We have got some length, and unless we swerve we may go on with safety. We must go on for no man the most determined Empiric can avoid reasoning.[68]

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[66] Cullen mss. #12 op. cit. p. 3; Cullen mss. #11 op. cit. pp. 3-4.

[67] William Cullen Lectures on the Materia Medica 1773.

[68] Cullen mss. #16 op. cit. II lesson 8.

The assertion of general principles, and their constant modification by the accumulation of more facts and more information, was for Cullen the end in itself. Knowledge of and the accumulation of facts, "which must lead to the knowledge of Causes . . ."[69] thus assumed the proportion of a major methodological tool. Facts must be collected by putting them in writing, he insisted. They must be collected from the students' own experience and from books, which must be culled for legitimate facts (i.e. those based upon demonstrable experiment or experience).[70] He did not dismiss the ancients; there was much, he believed, in ancient writings which had elements of truth in it. History, in fact, was for Cullen the study of both the past and the present for the purpose of collecting together legitimately factual pieces of information; thus "chemical history" was "the knowledge of those facts which must lead us to the knowledge of Causes, or the philosophical Parts of Science."[71]

Cullen called this scientific methodology "dogmatism." When a "Dogmatic Physician" prescribes a remedy, he told his students, he should not prescribe merely on the basis of past experience of that remedy. He may do so, and he no

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[69] Cullen mss. #10 op. cit. p. 22.

[70] Ibid. p. 28.

[71] Ibid. pp. 22-23. See also Cullen mss. #14 "Lectures on the chemical history of vegetables and animals" c.1755 p. 13.

doubt will if he can, but this was bad medical practice. Past experience must be qualified by intimate knowledge of present circumstances. "As a Dogmatist he proposes that remedy as suited to answer the Indication which his system has formed, i.e. the knowledge of the change necessary to be produced in the human body in order to change the state of disease into that of health. . . . It is this, the forming of such indications, the expressing wherein the change consists that is to be produced by our remedy, that is peculiar to him as a dogmatist."[72]

Knowledge of what that change should be would differ with different persons in different circumstances, and demanded universal knowledge of the state of human beings in health and in disease. "The general plan of Dogmatic Physic," he explained at another time,

> as I have explained before, consists in comparing health and sickness, first in knowing what is the state of the Body in Health, and in comparing that with our knowledge of the state of the Body in Disease, and from thence we learn what Change must be produced in the body to recover it from a morbid state.[73]

To do this, all the facts empiricism had to offer must be accumulated, and added to this it was necessary to take account of all the immediate circumstances relevant to the particular individual and the particular disease. "Single solitary facts are of very little use," he considered,

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[72] Cullen mss. #18 op. cit. I pp. 59-60.

[73] Ibid. V p. 6.

> and to render them useful we must increase their number, and we must especially endeavour to render 'em general. We must endeavour to obtain general facts, and for this our view must be very comprehensive, and it is necessary to consider every circumstance and appearance of health as well as Disease, and we must also consider the whole of surrounding nature, all the bodies and powers that upon any occasion may act upon our System. In order to get the whole of the facts and to be able to judge of 'em we must study natural history, all which give facts relative to the cure of diseases.[74]

In other words, Cullen was urging his students to strive constantly to attain general principles, at the same time that he was urging them equally to be sceptical of the authority of general principles. Ultimately, therefore, he was advocating continual assessment, continual reappraisal and a diffidence towards positive statements which could be open to refutation. Hume's work was an end in itself, a warning to scientists. Cullen as a scientist took the warning and cast his own empirical methodology in a similarly sceptical framework. It is this sceptical criticism which he brought to scientific methodology which marks the true originality of Cullen's work. He expanded the inductive method to embrace a limitless extension to the collection of facts, and in doing so shifted the focus of attention away from the authority of the general principles themselves to the process of accumulating facts.

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[74] Ibid. I pp. 59-60.

CHAPTER VIII

HEALTH AND VIRTUE: WILLIAM CULLEN'S PRACTICE OF MEDICINE

> EST ULUBRIS . . . discontent and dissatisfaction, restlessness and murmuring, are not alleviated or removed by changing place and residence; but that in the most deserted and solitary places, such as was Ulubrae, an obscure town in the marshy district of Latium, if the mind is right, tranquil, and properly trained, happiness is within every one's reach.[1]

William Cullen did not want the chair of the institutes of medicine, to which he was appointed in 1766. He wanted to teach the practice of medicine, and although that chair too became vacant in 1766 when John Rutherford retired, it was filled by John Gregory, from Aberdeen.[2] In the following year, however, Gregory and Cullen agreed to amalgamate the two chairs, and for the next seven years --until Gregory's untimely death in 1773--each taught either the theory or the practice of medicine, alternating annually. In this way, Cullen told his students, he could teach a comprehensive course covering the theory and practice of medicine every two years.

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[1] John Thomson An Account of the Life . . . of William Cullen M.D. op. cit. 1859, vol. II pp. 744-45.

[2] John Gregory (1724-1773) M.D., F.R.S.; son of James Gregory, Professor of Medicine at Aberdeen (d.1731) and cousin of Thomas Reid, Professor of Philosophy at Aberdeen 1746-49.

During this period Cullen taught his students, in a more comprehensive fashion than at any other time in his career, his theory of medicine, or to be more precise his theory of disease. In his view the proper study of medicine should revolve around pathology not, as had previously been the case in Edinburgh, physiology. Boerhaave, he said, had spent six months on physiology and two months on pathology and therapeutics, and this "Leyden Distribution," as he called it, had been followed by the professors in Edinburgh. "Boerhaave's close followers in this university," he said,

> for a long time managed in the same manner and I must be allowed to say I was the first Person who gave any tolerable share to the pathology and therapeutics.[3]

Cullen's two year course was divided into three parts; Physiology, Pathology and Therapeutics, or as he described them, "Life and Health, the general doctrine of disease and the general doctrine concerning the means of preventing and curing 'em."[4] In sum it was an exploration of the phenomena of disease in its social, cultural and physiological manifestations. He took as his point of departure his neural physiology and the argument that sensation and the human mind jointly dictated human motion. From this he formulated a pathology proposing that with the exception

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[3]Cullen mss. #18 op. cit. c.1770, I, pp. 33-34.

[4]Cullen mss. #18 op. cit. c.1770, I, pp. 33-34.

of some morbid conditions of the mind, all the factors which could cause illness had a physical source. And the physical source generally resulted from excess, generally of the passions. Control of the powers of the mind and passions, therefore, became Cullen's principal therapeutic remedy. He believed that almost by will-power alone disease could be conquered. His conception of preventive measures was broad, ranging from proper child-rearing practices to the control of individual fear and timidity.

Cullen's course essentially demonstrated that temperate conduct could be justified on sound medical principles. He wanted to teach his students that strength of body and mind could be achieved through rational and temperate self-regulation. His course would have made perfectly good sense to young people being given the sort of advice eschewing specific religious doctrine in favour of conduct dictated by the virtues of sobriety, moderation and common sense. Cullen's pathology gave them the same advice but offered medical, not theological, justification.

I

All Cullen's ideas about disease rested upon the belief that the proper relationship between all physical substances in the natural world was one of balance, or harmony. He was intellectually quite incapable of outlining a structure based upon a progression of orders or influences. He placed Physiology first in his course, but not because

he intended it to be considered of primary importance. As he continually told his students, in many respects his pathology was hardly distinguishable from his physiology, in that all the processes and forces acting upon the human body in one set of circumstances maintained health, whilst in another set of circumstances could produce disease. In a similar way he found it entirely too arbitrary to assign primary importance to one particular organ of the body. They were, he said, all interrelated and "may be Considered Mutually as causes and effect."

> Thus the action of the heart cannot subsist without the power and energy of the brain, nor can the energy of the brain subsist long without the action of the heart. . . .[5]

An individual in a state of full health had achieved perfect balance, he believed, both within his own physical structure and in relation to the rest of the natural world.

Cullen did not use the words "balance" or "harmony." He used the term "standard of health," or (what for him was more acceptable) "latitude of health." Physicians, he said, have long been sensible, that a perfect standard of health was impossible. He rejected Gaubius' definition of disease--"A disease is that condition of the human body where it is rendered unfit to exercise the actions proper to it exactly according to the Rule of Standard of Health"[6]--partly on the grounds of the rigidity of the standard of

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[5] Ibid. p. 74.

[6] Ibid. IV p. 6.

health it implied. Cullen informed his students that a concept of a "latitude of health" had arisen, from which the bounds of health "may deviate on either hand without going to the opposite side of disease . . . It is plain that if I should establish a standard of health," he continued,

> it would consist in a certain vigour of action affixed to a certain time of life etc. and a person not arrived to that, and in old age when they have gone from it and cannot rightly perform their actions ad legis sanitatis they are still considered as not under a disease.[7]

Health depended, he said, not only upon age, but upon the constitution of each individual at any particular moment in time. The line between health and disease was shadowy; there were many variations and deviations of the human condition which could not be considered as a diseased state, because many malfunctions of the body were the result of wrong habit and practices, not specific diseases. It was precisely for reasons such as these that physicians generally, as William Eccles had done earlier in the century, rejected serious consideration of "external causation" in their analysis of disease.

In one sense Cullen's response to such an argument echoed that of the Incorporation of Surgeons; he argued that "Latitudo sanitatis . . . [was] to be defined by the common sense of mankind."[8] He also drew on a more sophisticated

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[7] Ibid. p. 14.

[8] Ibid.

line of argument, one which again we see being used before him by George Young. In 1753 Young published a highly popular study of the use of opium, in which he defined the study of the materia medica only in terms of their relative therapeutic value. "The medicinal virtues of drugs," he wrote, "are their effects in the human body, and not in a retort, or still. It is therefore from the practice of physic, and not from chemistry, that we must expect to be acquainted with them."[9] Young then went on to amplify his observations on the different effects produced by medicines prescribed for different people, at different times, etc. It was an argument commonly recognized, no doubt, but as a tactical weapon for reducing unsubstantiated claims to authority, in this case the virtues and properties of substances and compounds in the materia medica, Young's observations echo arguments used by the Incorporation of Surgeons earlier in the century. "It is extremely difficult," wrote Young,

> to ascertain the medicinal properties of drugs, especially those we commonly esteem alternatives: for the same individual medicine has different effects, not only on different constitutions and in different diseases, but also in different stages of the same disease; nor will less uncertainty arise from a variation in the dose, and in the frequency of its repetition.[10]

Between 1761-1766 we find William Cullen lecturing on the materia medica and causing such a stir that a pirate

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[9]George Young M.D A Treatise on Opium Founded upon Practical Observations Lond. 1753, p. 5.

[10]Ibid. pp. 9-10.

edition of his lectures was published in 1771 (taken from lecture notes of 1761). They were published, according to the Introduction, because they were based upon a plan "entirely new and original . . . and executed . . . in a manner which gained universal approbation."[11] The plan Cullen used was the same as Young's; he organized the materia medica not according to some system inherent in the substances themselves, such as taste, smell or botanical order, which he claimed was the common practice, but according to their physiological use. They became an adjunct to, and of relevance only in respect to, his course on physiology. At the same time they did not refer to any physiological absolutes: "For example, such a drug is a Cephalic and therefore good for all disorders of the head. . . ."[12] Instead, Cullen argued that the particular state of the body was the only valid basis for determining the proper use of the materia medica. "The operations of medicines," he said,

> depend somewhat on their own nature, but as much on the particular modification of the system to which they are applied. Instead, therefore, of spending time in examining the different figure of the particles of medicine, their sharpness, their oilyness [sic] etc., it will be more useful to say somewhat on temperaments.[13]

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[11] William Cullen Lectures on the Materia Medica 1773, Introduction. See Appendix IX "Lectures on the Materia Medica" by William Cullen.

[12] Cullen mss. #12 op. cit. 1757-58, p. 128.

[13] William Cullen Lectures on the Materia Medica op. cit. 1773, p. 9.

In Cullen's combined lectures on the theory and practice of medicine, he made life dependent on external powers. "While life subsists," he wrote, "there is a stage of the brain, of the nervous system, that is different from the state of animal germs, and from the state we call death; the state we speak of depends upon a certain state of excitability still subsisting, but when that is gone, and the collapse is more complete and irrecoverable, it is a state of death. Our system," he continued,

> is not a mere automaton, supported in its duration by any powers, whether of mind or body, subsisting within itself. It appears that we have constant need of some external assistance, of the impression of external agents; and if these could be removed, we would not only certainly fall asleep, but we would very soon become dead. I have endeavoured to prove that there is not a muscular fibre in the system which does not depend, more or less, for its power upon the sufficient vigour of the energy of the brain, and that without it the muscular actions are much more languid and weak. But though the energy of the brain is the proper vital function, it again depends upon certain other exercises and functions of the animal oeconomy; and both together certainly depend upon the power of external impressions.[14]

He wanted to consider the nervous system in particular, he said, as "an animated machine, as suited to perform a variety of motions, as fitted to have communication with the other parts of the universe, to be acted upon by external bodies, and to act upon these. . . ."[15] "I intend," he told

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[14]Quoted in John Thomson Life and Writings . . . of William Cullen M.D. op. cit. 1859 I, pp. 315-16.

[15]Cullen mss. #18 op. cit. c.1770 III pp. 8-9.

his students in the introductory remarks to his lectures on therapeutics,

> to comprehend the consideration of every power acting upon the human body and capable of changing it . . . all the power Changing the Body may be referred to the action of other Bodies upon a man or to the actions of a man upon himself, [and] it is proper to subdivide these last as they are the operations of the mind or body more strictly. . . .[16]

These two concepts, the idea of balance in the natural world, and the importance of external powers in supporting life and maintaining balance, provided the structural framework of Cullen's course. He would describe the physiology of a relative state of health, discuss powers acting on it to cause disease, and powers needed to be applied to restore health.

In his lectures on pathology,[17] Cullen presented the human body as a mechanism combining three systems: the simple solids, the vital solids (the nervous system), and the animal functions (the fluids). He took the simple solid first. It was characterized, he said, firstly by a constant, although imperceptible, increase in bulk by the accretion of nutrition from the animal fluids, and secondly by a capacity to acquire strength and vigour. This latter function he called "mobility," which meant nothing to do with its ability to alter shape or position, but was a description of the relative state and composition of the

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[16] Ibid. V p. 4.

[17] See Appendix X "Lectures on Pathology" by William Cullen.

solid matter itself, its "cohesion," "flexibility" and "elasticity," which became progressively more dense and rigid and less fluid and elastic as the human body progressed from foetus to old age.[18]

Cullen refused to get bogged down in what he considered the fruitless theorizing on the essential composition of the simple solid. It was "either not known or at least not agreed upon among Philosophers," he maintained, "and therefore [is] not to be attempted here."[19] As far as his students were concerned, he was only interested in the propensity of this matter to change. "We observe the properties [of the simple solid] are considerably different in different persons and in different circumstances," he said,

> and may be increased or diminished. . . . We cannot often determine the Causes in general or the absolute measure and standing; we can only observe the causes of the increase or Diminution, and it is there that we are chiefly interested[20]

Changes in the simple solid were brought about as a result of the "original stamina" of an individual, its sex, its temperament, the amount of exercise taken, the temperature and quality of the atmosphere, the tension of the body, the amount and type of nutrition and various medicinal substances. Morbid affections of the solid parts,

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[18] Cullen mss. #18 op. cit. c. 1770 I p. 125.

[19] Ibid.

[20] Ibid. p. 113-14.

therefore, were the result of excess or deficiency of any of these factors. Excess mobility caused debility, which basically needed nutrients, tonics, stimulants, rest, and sometimes the therapy of coolness or exercise. A deficiency of mobility produced rigidity, which needed relaxants such as heat, sedatives, a less stimulating diet, and again exercise.

Of the powers acting upon the simple solid, nothing, he believed, could alter the original stamina, and although he had little to offer in the way of explanation of its fundamental origin--"There is little hope of finding wherein it consists"--he went on to speculate that most probably it would be found in the state of the simple solid.[21] Similarly, nothing could alter the sex of an individual, of course. Exercise, temperature and the quality of the atmosphere were discussed in more detail later in relation to their effect on the nervous system. He was dismissive of the value of most medicinal remedies. Corrosives "or the means of destroying the texture of animal substances," astringents or "the power of increasing cohesion" and emollients "which diminish cohesion and increase flexibility of the simple solid" were all largely for external application and purely local in their effect.[22] "These cannot propogate far their

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[21] Ibid. IV p. 68.

[22] Ibid. V pp. 85, 92 and 99.

effects on the system," he had told his students in his materia medica lectures.[23]

The major force acting upon the simple solid, by increasing its size and bulk, and providing the best possible conditions for the development of vigour, was adequate and proper food. He admitted it was not common to include diet in a medical lecture, but argued that it was necessary because of its evident importance to the healthy development of the simple solid, and also because "it is proper to consider the tendency of every Different Circumstance of the Human Manners."[24] The substance of the solid parts was, he said, constantly being supplied with animal fluid, which was that part of our fluids containing nutritional matter. "There is no need to reiterate," he said,

> that they are constantly indicated; the reason has been given before that such is the nature of the animal oeconomy that our fluids are constantly Degenerating, and if they are not thrown out of the Body they would soon be noxious to it, so that there is a constant demand for a fresh supply from aliment being Thrown in. . . .[25]

The discussion of food therefore constituted an important and lengthy part of his therapeutic lectures, as it had his lectures on the materia medica.

Cullen well understood general relative nutritional values; for example "There is not so much nourishment in a

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[23]William Cullen Lectures on the Materia Medica op. cit. 1773 p. 20.

[24]Cullen mss. #18 op. cit. c.1770 V p. 81.

[25]Ibid. p. 48.

certain quantity of turnip as in a like Quantity of Beef or mutton, the one containing a greater quantity of nutritional matter than the other."[27] In assessing the relative value of different foods, however, nutritional values played a minor role. In characteristic fashion, he would not offer his students proof of the relative value of different foods by tracing the physiological process by which food was converted into fluid form. Food would be assessed, he said, by "the common experience of mankind,"[28] relative to the environment and climate where any particular food was used. Its value would be determined by observing "the choice that has been made and [examining] the nature of it as well as I can," although he readily acknowledged that he could often not understand on what basis some food was preferred to another. There appeared, he said, to be "some instinctive likings and disgusts . . . [and] in this they are very little corrected by experience."[29] The conclusions Cullen arrived at from this method of investigation show him to have favoured a vegetable diet.

Basically he believed that a spare diet was adequate for most of the purposes of life, although he acknowledged the diversity of human experience and realized that such a generalization was probably faulty.[30] The young and growing,

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[27] Cullen mss. #18 op. cit. c.1770 I p. 127.

[28] Ibid. V p. 29.

[29] Ibid.

[30] Ibid. V p. 74.

and those involved in hard labour and exercise, needed the richest diet, he maintained, but this did not necessarily mean large quantities of meat. Excessive meat eating, he felt, was one of the banes of civilization, and hardly necessary to anyone, and particularly not before the age of thirty.[31] Most of the inhabitants of the world, he pointed out, lived on a diet of vegetables and farinaeous substances without any apparently harmful effects.[32] Except where habit had established a dependence, he concluded, he found no justification for the consumption of large quantities of meat. "In short," he said,

> I cannot perceive that animal food is anywhere necessary to health, except in the case of labour and Great Cold, and in all Cases its proportion must be very small, and milk joined with the Farinacia [sic] are probably sufficient for every Duty that Human Life requires.[33]

He recognized, however, that the exceptions he had made were important. Great labour and great cold were two important and constant elements in the lives of such people as the poor and soldiers, and he wondered whether a vegetable diet was not part of the reason why these groups were often the first to be affected by outbreaks of disease. They were also, he reflected, often the least concerned with personal cleanliness, but he left his students to speculate upon these observations themselves.[34]

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[31] Ibid.

[32] Ibid.

[33] Ibid. p. 80.

[34] Ibid. pp. 81-82.

Cullen's arguments for a vegetable diet, again, did not rest upon gross nutritional values, although in his materia medica lectures he had spent a great deal of time demonstrating that most vegetables did in fact contain sufficient quantities of nutritional matter. His basic reservations about the consumption of meat rested upon its stimulant qualities. The relative value of aliment was to be determined, he argued, by its ability to be converted into animal fluid; thus "vegetables are more nutrient as they are more oily."[35] Animal food was much less easily converted into animal fluid, and the extra work thus generated in the digestive system--the mechanical process of which in any event generated a certain amount of tension --served to increase the degree of tension to an unhealthy level. "We know that Digestion," he said,

> constantly produces an irritation and sometimes in all its forms a Degree of fever, and in proportion to our food being more or less soluble it will be more or less stimulant by its continuing longer to operate. . . .[36]

Moreover, the increased time taken to assimilate animal fluid in the vessels could, he argued, lead to a dangerous build-up of fluids. This could give rise either to putrefaction[37] or to a higher degree of strength in the vessels than was conducive to the proper state of balance.

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[35] Ibid. pp. 30-31 and 45.

[36] Ibid. p. 37.

[37] Ibid. p. 40.

II

The powers of stimulation and sedation were for Cullen the most important properties to be looked for in any powers acting upon the human body, because they acted upon the nervous system. Although he had argued that the functions of the body were mutually dependent, it is clear that he believed that it was in the nervous system that the generative sources of life lay. "Most powers," he said,

> acting upon living bodies do not act in the same manner or not at all upon dead Bodies, so that the Effects depend upon the powers of Life, upon sensibility and irritability in the whole or in the parts.[38]

These two qualities, sensibility and irritability, were for Cullen the most important qualities man possessed. They were "the powers of life" and upon their correct balance the proper functioning of the whole human system depended.

Sensibility was the ability of the nervous system to receive sensations and thus to transmit will.[39] It was a quality of human beings entirely personal, which Cullen defined as

> a certain fitness to be acted upon by impressions, to be so moved by the impulse of external bodies, as that a motion may be propagated to the Brain and produce Sensation and its various consequences . . . this fitness of the Sentient Extremities may be called their Sensibility. . . .[40]

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[38] Ibid. pp. 9-10.

[39] Ibid. I p. 78.

[40] Ibid. IV pp. 62-63.

As in the case of the simple solids, excess or deficiency of sensibility would, if pushed beyond certain limits of toleration, constitute disease. "There is a degree of sensibility," he said,

> that is suited more especially to the oeconomy of every person, always allowing for the latitudo sanitatus but that is manifestly within the limits of a certain degree suited to the purpose of the Oeconomy, and if it is either more or less it may be considered as a disease. . . .[41]

In another instance he referred to the "law of sensibility" which was the response of the individual to excessive passions or emotions. "It is the nature of the human mind," he said,

> to indulge every present emotion or passion and this would not be prevented from going to excess if it was not counteracted by some other Sensation, Consideration or motive. . . . it is then that the law of sensibility takes place. . . .[42]

Sensibility was, therefore, a tuning mechanism involving the body and the mind, individually set to suit the particular constitution of every individual, by which he or she was enabled to function rationally and temperately. Cullen was careful to make it clear that he believed this mechanism was governed by the body. Gaubius thought that sensibility derived from original stamina, he said, but he did not agree.

> I say that it is probable that it is the constitution of the solid medullary substance of our fibres that gives the degree of

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[41] Ibid. p. 63.

[42] Ibid. p. 135.

> sensibility, as we commonly find that a certain delicacy of the simple solid does accompany the increased sensibility of the nervous system.[43]

"Irritability" was the term Cullen adopted from Haller to refer to a certain degree of "mobility" of the muscles, and like the concept of "mobility" of the simple solid, it is the most obscure of Cullen's definitions. It is probably most accurately translated as a nervous power which the muscles possessed in addition to the power of vigour. These two characteristics of the muscles--mobility and vigour--were always to be found in inverse relation to one another; a person with excess vigour would have a deficiency of mobility, and vice versa. If it were expressed as a table it would look like this:

Excess vigour	was called	Increased tone (strength)
Deficiency of vigour	was called	Debility
Excess mobility	was called	Irritability
Deficiency of mobility	was called	Torpor.

A person with a high degree of strength would also be susceptible to torpor, while a person in a state of debility would also be found to have a high degree of irritability.

The balance of sensibility and irritability was maintained by the same external powers which affected the simple solid, but with the important addition of the brain. Morbid conditions of the nervous system--"nervous diseases" --occurred when this balance was upset by excess or deficiency

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[43] Ibid. p. 81.

of any of them,[44] and were countered by the application of an opposite to restore the balance. The brain had a peculiar function, in that it not only was acted upon by external powers, but was also classified as an external power itself, modifying the actions of the body and the actions of remedies.[45]

Powers tending to support or sustain balance, and counteract deficiencies, were called tonics and stimulants, and powers tending to undermine balance and reduce excesses were called atonics and sedatives. Tonics were powers which increased the ability of the muscular fibres to contract, thus increasing their vigour and irritability and producing increased tone, or strength. It was stimulants, however, which constituted by far the largest single classification of remedies. They were "powers which increase in the human body all the motions which are peculiar to it,"[46] and this meant not only increasing "the mobility of the nervous powers more generally" but also "as increasing the motion of the animal power in the Brain . . . such [powers] as excite the action of moving fibres . . . and such as increase the motion of the blood and other fluids of the body."[47] Atonics and sedatives were powers which decreased the vigour or tone of the system.

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[44] Ibid. p. 57.

[45] Ibid. V pp. 9-10.

[46] Ibid. p. 190.

[47] Ibid. pp. 191-92.

Discussion of the stimulant and depressant powers were the most important and extensive part of Cullen's therapeutic and materia medica lectures, and throughout he was much more expansive and confident when discussing stimulant remedies. There were fewer sedative remedies and their effect was more difficult to calculate. His greatest concentration once again was upon natural powers already observably operating upon the body to stimulate or sedate it, but he was not quite so dismissive of synthetic medicinal remedies as he had been when discussing the simple solid. "As we have found that the nervous power alone is capable of considerable and sudden changes," he said, "it is to this that our medicines should be chiefly directed."[48] He discussed various material substances to be found in the materia medica which had tonic and stimulant properties, but nevertheless his principal interest lay in materials which were already familiar to the human system. Wine was probably his most prominent medicinal stimulant, although opium occupied an almost equally prominent role.

The primary stimulant, Cullen believed, was sensation itself "for withdraw Sensation and the system falls asleep."[49] The second most basic stimulant was heat or cold; heat because "we know that a certain degree of heat is necessary to the support of animal life."[50] A certain amount of

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[48]William Cullen Lectures on the Materia Medica op. cit. 1773.

[49]Cullen mss. #18 op. cit. c. 1770 V p. 202.

[50]Ibid. p. 206.

animal heat was generated by the human body independently of external heat, but the human body was in its "most proper condition" when augmented by a certain amount of external heat. Too much external heat, however, reduced the cohesion of the solid parts and increased fluidity, thereby reducing tone, inducing relaxation and in the extreme producing debility. Too much heat could also contribute to the putrefaction of the blood. Cold was an important stimulant in its power to increase the generating power, as long as the stimulation was mild and did not demand radical change in the generating power. If this happened, then the generating power would be unable to cope, and an inflammatory spasm would occur in the blood vessels. Cold could also induce greater vigour by condensing the simple solid, thereby bringing the particles closer together and thus facilitating contractions.[51] Too much cold, of course, could induce debility. The ideal again was perfect balance. Extremes of either heat or cold were to be avoided, not only because of their simple detrimental effects, but because of the compound reaction of body to them by spasm. Thus climates were "more or less healthy as they are liable to less vicissitudes of heat and cold."[52]

Another important source of tonic and stimulant effect was exercise. Exercise had "a special share in

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[51] Ibid. pp. 217, 220 and 237.

[52] Ibid. p. 221.

giving that rigidity to the animal solid,"[53] because motion of the muscles was the principal means by which liquid nourishment was concreted into solid form, thus making the simple solid more dense. Thus exercise gave strength and vigour.[54] Moreover, by strengthening the simple solid, the nervous system ("the inherent power of which is commonly in proportion to the firmness and rigidity of the simple solid") was also strengthened. Thus there was "nothing more certain that under certain limits exercise gives strength to the moving fibres."[55] Exercise had an equally beneficial effect on the fluids; it increased the circulation, which in turn increased the secretions and excretions, particularly inducing sweating and thus preventing other secretories oversecreting.[56]

Powers of decreasing stimulation and reducing vigour were for Cullen more problematic. Venesection, emetics, warm bathing and opiates were all given due attention,[57] but it is clear that Cullen believed sedation was best achieved by the removal of stimulating agents. For example, when discussing the increased tension of the vessels produced by excessive meat eating, for which the

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[53] Ibid. p. 32.

[54] Ibid. pp. 239-40.

[55] Ibid.

[56] Ibid. p. 242.

[57] Ibid. pp. 170-90.

usual remedy was bleeding, Cullen argued that the substitution of a weaker for a stronger aliment provided a natural sedative effect. Also, in fever only food with very low stimulating properties, or none at all, should be given, "and when I am affected with Cold," he explained, "I do not find it necessary to Blood, as the taking away my meat and wine proves sufficient."[58] This remedial self-denial, or "the avoiding all the concurrent stimulii usually or unavoidably applied to the body," constituted Cullen's principal therapeutic remedy, and was his understanding of an "anti-phlogistic regimen."[59]

All of these various stimulatory and tonic remedies were applicable equally to the body and the mind, but in addition, the passions of the mind could also have stimulatory or depressant effects on the vigour of the body. In particular, the degree of attention the mind bestowed on any sensation had an effect on its sensibility. A "tone of mind," a disposition "on the one hand to Joy, Gaiety, and hope or on the other hand to sadness, seriousness and dispair," could increase or decrease sensibility by affecting the degree of attention disposed to any particular sensation.[60] Cullen referred to this tone of mind on numerous occasions as a contributory factor to increased

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[58] Ibid. pp. 45 and 47.

[59] Ibid.

[60] Ibid. IV pp. 168-71, 174 and 74.

or diminished sensibility. It could also contribute directly to the material growth of the body, he argued. Animals were not only dependent for their vigour upon the bulk and growth of the body, but also "according to the state or manner in which animals are reared their growth is greater or less, and therefore the manner in which animals are brought up will have effect here."[61]

There was some dispute, Cullen claimed, as to whether this "tone of mind" was attributable to moral or natural causes, and on the whole he tended to believe, he said, that it had natural causes--as fear was the result of lack of vigour; "but the Physician," he went on, "must upon occasion be the Moral Philosopher also, and he will sometimes practice with little success unless he can apply himself to the Mind."[62] In any event, "we must take this law of attention along with us," he declared,

> that the mind is attentive only to one sensation at the same time, so it is an observation as old as Hippocrates, that the greater pain prevents the perception of a lesser.[63]

Cullen's observation on the materialistic causes of fear stemmed from his great reliance on the powers of custom and habit. He believed that custom constantly modified all human behaviour, but he carefully differentiated between his own work and that of the moral philosophers. "To this

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[61] Ibid. p. 154.

[62] Ibid. p. 143.

[63] Ibid. p. 144.

head [the effects of custom] also belongs," he told his students in his materia medica lectures, "the association of ideas, which is the foundation of memory and all our intellectual faculties, and is entirely the effect of custom; its influence even on morals is very great, but the consideration of it does not properly belong to this place."[64]

The principal physical effect of custom was to decrease the force of an impression, and consequently repetition diminished sensibility. Nowhere was this more apparent, he said, than in the power of repetition to diminish the power of those impressions which were the cause of fear. Timidity and trepidation he considered another of the burdens of civilized society. The inhabitants of a former age had to encounter every vicissitude of weather and environment, he said, and had thus had their sense of fear diminished,

> whereas in the cultivated country, if the inhabitant is obliged to travel, roads are prepared for him; if he passed by a precipice, it is guarded by a parapet; he crosses the river by a bridge; he is guarded against the more severe attacks of the weather; and is therefore liable to a great deal of timidity while the other becomes hardy and bold.[65]

The contrast was equally remarkable, he observed, in the case of women "in a state of simplicity and in that of

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[64]William Cullen Lectures on the Materia Medica op. cit. 1773.

[65]Cullen mss. #18 op. cit. c.1770 IV p. 72.

refinement."[66] The former were exposed to all the hardships facing men and "meet with less indulgence from the men, who are of less delicate feelings," while in the refined state they were carefully protected and guarded against everything that may hurt or even shock them. Consequently, timidity and trepidation were to be expected of them, whereas women of more simple experience suffered none of these handicaps. Cullen was not advocating primitive life, however. Neither of these extremes were for him desirable. Once again it was all a question of balance. "We cannot keep things within their proper bounds, and readily run to excess, perhaps to the other extreme."[67] He returned to the question of fear on a number of occasions. Contrary to those who thought it entirely attributable to moral causes, he believed it was a result of physical disabilities. "I am disposed to think," he said, "that Courage is a natural consequence of a State of Vigour in the body, and that debility on the contrary is a cause of timidity."[68]

While Cullen on the whole stayed away from a discussion of epistemology with his students, he did consider the association of ideas in the context of some "errors of sense," which he believed could not be assigned

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[66] Ibid. II pp. 72-73.

[67] Ibid. IV p. 73.

[68] Ibid. IV p. 170.

to physical causes. "False imagination," "the perception of objects other than as they exist," and "perceiving in an altogether singular way" were largely discussed in terms of incomplete or erroneous relationships of ideas being made by the mind in recalling ideas through the faculty of memory. Although he tried to give a coherent and rational account for these inconsistencies, he recognized that even in health there was considerable difference of opinion between men as to what constituted a sound judgement, and once again he resorted to the yardstick of common practice, the opinion of the majority, as being the most valid authority. "The objects about which men are conversant are for the most part the same," he said,

> and there is so much similarity in the operation of the human mind that the same relations are marked, so that there is a sameness of judgement established among different men in which they generally agree, so that we are most secure in ascertaining an error of judgement when there is a considerable deviation from the common sense of mankind, and such a deviation may then be considered as a disease.[69]

But of course, at the same time Cullen was immediately ready to qualify such a generalization. "But there is a certain latitude admitted in judgement," he continued. "Men differ greatly from one another without either of 'em being reckoned delirious. . . ."[70]

When he came to consider the third system of the human body--the fluids, or natural functions--which Cullen

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[69] Ibid. IV pp. 414-15.

[70] Ibid.

described as a mechanism by which aliment was converted into animal fluid, and the residue secreted by various channels from the body, he made no secret of the fact that he felt disease seldom originated in the consistency of the fluids. He had little regard for existing opinions on the fluids. "Pathologists have been very improperly busy," he said,

> in considering the affections of the fluids; that they have a share in the natural functions and that their deviations have a share in disease is true, but they are the most inconsiderable part of 'em.[71]

The doctrine of "lentor"[72] of Boerhaave and Bellini he thought "generally imaginary,"[73] and he mocked those who devoted too much attention and time to speculation on the means of changing the viscidity of the blood. "When I was first acquainted with Physic," he said,

> I found Physicians reasoned very boldly, they spoke of thickening or thinning the blood with as much clearness as a Scotch maid would speak of making pottage thicker or thinner.[74]

As he had pointed out, he did not deny that morbid conditions of the fluids could result from incorrect consistency of the fluids, and he did not neglect discussion of all the numerous medicinal substances used to remedy wrong consistencies, but his general tone was dismissive of

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[71] Ibid. IV p. 194.

[72] "Lentor" referred to thickening the fluids.

[73] Cullen mss. #18 op. cit. c.1770 V p. 113.

[74] Ibid. IV p. 226.

their value.[75] The proportion of the fluids to the solids, he believed, "is easily altered by diet and manner of life, therefore it is not a predominant part of temperament, and so medicines can have little effect on it."[76] The state of the fluids also, in his opinion "might be disregarded as they depend on the state of the solids and the nourishment . . . any changes we can produce are so by diet, and therefore must be slow."[77] Moreover, the distribution of the fluids "is scarcely to be altered, but by the gradual progress of life, and therefore is most of all out of the reach of medicines."[78]

The most important cause of morbid conditions of the fluids, Cullen believed, was deviation from a correct degree of tension of the arterial system. Tension was an important corollary to the action of the will and movement, operating in exciting contractions of the muscles. The degree of tension required by the body was largely dictated by custom and habit. Thus "we find that it is necessary," he said, "that the various tools or Instruments should be of a certain weight to the due and steady performance of action."[79] The tension of the body was set by the circulation

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[75] Ibid. V pp. 112, 113, 132 and 134-44.

[76] William Cullen Lectures on the Materia Medica op. cit. 1773.

[77] Ibid.

[78] Ibid.

[79] Cullen mss. #18 op. cit. c.1770 IV p. 117.

of the blood being maintained at a due and steady rate, by a regular supply of correct aliment and by the continuing function of the excretory and secretory organs. He had already discussed how important correct diet was in maintaining the correct degree of tension in the body. "I've said that aliment," he reiterated,

> in general is stimulant insofar as the exercise of the stomach is a stimulous to the system, and induces more or less fever . . . and as it supplies the fluids and fills the vessels it will increase them by their tone and give a stronger action in the vessels of the system and the effects of this in giving strength is well known.[80]

When Cullen made the observation that "an English workman may do double the business that a Scotsman can do in the same time, there appears here the effect of a full meal . . ."[81] he was not, then, making an observation on the nutritional contribution made by food to the Englishman's strength but to the mechanical contribution it made to the arterial system.

The most important factor, therefore, regulating the tension of the system was "that which is given to the arteries by the blood propelled into 'em, and this can be communicated to every fibre of the system,"[82] and most of the therapeutic remedies Cullen proposed to counter morbid conditions of the fluids consisted of some combination of

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[80] Ibid. V pp. 45 and 47.

[81] Ibid. I p. 118.

[82] Ibid. IV p. 118.

diet and exercise to stimulate the circulation, and "anti-phlogistic" remedies to reduce tension.[83]

III

In a suitably rigorous academic manner, therefore, Cullen was conveying to his students ideas which were not unfamiliar in Edinburgh: that disease was as much a question of environment, society and personal behaviour as of physiological malfunction. "The history of all nature," Cullen told his students, was the task of the physician.[84] And to make sure his students took the desired approach in their study of nature, Cullen adopted a "Doctrine of Causes" which underlined preventive medical practices. One of the principal objectives of his two-year course was to delineate precisely preventive from curative medicine.

Every diseased state, Cullen said, was the result of "a chain or series of causes" which could be traced.[85] He divided causes into "proximate causes", which were the physiologically observable symptoms,[86] and "remote causes." The former group were the principal focus of his clinical lectures in the Infirmary, and he developed a "Nosology", or

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[83] See Appendix XI "Notes on Cullen's therapeutics".

[84] Cullen mss. #11 op. cit. c.1766 p. 2.

[85] Cullen mss. #18 op. cit. c.1770 IV p. 18.

[86] Ibid. p. 33.

classification of diseases, based upon the "proximate causes."[87] Prognosis and treatment would obviously proceed along traditional curative lines.

The second group of causes he called "remote causes."[88] These were largely the environmental and social factors Cullen had drawn upon so extensively in his physiology and pathology; in his words "all these circumstances which in series or in concurrence produce the proximate cause, and which then cease further to act on the body."[89] Cullen did not agree with other writers who, he said, argued that since they did not necessarily produce the disease, they could not be considered a "true cause."[90] The "remote causes" constituted a major component of his lectures on Therapeutics, because Cullen considered it within the realm of man to control many of the "remote causes" himself. To legitimize this, Cullen used a subtle change of terminology. "The common language," he told his students,

> is that 'Medicine is the art of preserving health and of curing diseases' but I have said 'the art of preventing diseases'; for although I do not deny that the preserving of health is the object of a physician's care, yet I maintain that there is truly no other means of preserving health but what consists in preventing

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[87] See John Thomson Life and Writings . . . of William Cullen M.D. op. cit. 1859 II pp. 2-6.

[88] Cullen mss. #18 op. cit. c.1770 IV p. 33.

[89] Ibid.

[90] Ibid. pp. 23-24.

> disease. Every other idea is false, and has led to a superfluous, very often a dangerous practice. I say, that health properly understood, we cannot add to it, nor increase its powers. There is never room for our art, but when there is some defect in the constitution - some bias and tendency towards disease; and it is only by preventing this tendency, by correcting these defects, that is, by preventing disease, that we preserve health.[91]

It was only during the seven-year period 1766-1773 that Cullen had sufficient time to make the study of remote causes a distinct unit of study. After Gregory's death in 1773 Cullen's "Doctrine of Causes" was taught as a single progression of remote and proximate causes. "Philosophic Medicine" meant defining all the changes by which human beings deviated from the latitudo sanitatis, classifying them and attempting to define the general laws which would establish a perfect state of balance with nature. It is difficult, therefore, to extract from his later published work any particular therapeutic emphasis, but a survey of consultation letters dating from the 1770's until his death in 1790 shows him to have leaned heavily towards preventive remedies in his own medical practice.[92] Remote causes for Cullen reached to the extent of advice on child-rearing practices.

After 1773, therefore, preventive medicine was not included as part of his university curriculum, but Cullen

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[91] Ibid. I pp. 51-52.

[92] See G.B. Risse "Doctor William Cullen of Edinburgh" Bulletin of the History of Medicine 48 (1974) pp. 338-51.

continued to promote it. He produced a manuscript called "The Art of Health," which was known to at least some of his students.[93] In the manuscript, Cullen discusses the political and social dimensions of the idea of health practices and provides a final word on the extent to which "external causation" continued to find an influential voice in Edinburgh medicine.

Cullen's essay was aimed at audience of informed laymen, in itself a singular proposal. Yet Cullen did it in a manner which left the physician's work intact. What he was doing, he said, would not "produce a set of Smatterers in physic who may presume upon their imperfect and incompleat knowledge to prescribe to themselves and others . . . or with the utmost impertinence to dispute with physicians. . . ."[94]

The use of medicines and their actions on the human body would not be discussed. "This is a deeper affair," he said, "that costs me much labour in another place."[95] He only meant to discuss changes arising from natural causes. The distinction, he said, would be obvious to sensible men. "I can only do harm by making Coxcombs whom nature only meant for fools."[96] The "principles of physic" and natural philosophy would be included

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[93] University of Glasgow Archives-Thomson/Cullen Papers. Benjamin Rush to William Cullen Dec. 22 1784.

[94] Ibid. "The Art of Health."

[95] Ibid.

[96] Ibid.

> but it is neither the dark, the doubtful nor the intricate parts of these sciences, and it is such a set of principles only as are simple, sufficiently obvious and universally received and agreed upon. These I hope to deliver in an intellible [sic] language very free from the technical terms of the Science and in a clear and simple manner free from all very subtile or intricate reasonings.[97]

In the manuscript Cullen acknowledged the difficulties with which medical practitioners were placed in proposing preventive measures. The general opinion, he wrote, was that the preservation of health was not possible or even desirable; men were unwilling to submit themselves to the kind of regimentation required, because such practices would interrupt "the agreeable commerce of life." "A person who seemingly in health enters into an anxious and therefore scrupulous attention to the preservation of it must commonly appear to be a frivolous, unsociable and contemptibly selfish person."[98] In existing society, he agreed, these practices were not possible for the majority. Many "must not only hazard but must even sacrifice both their health and life to the good of the publick." He was obviously on the one hand referring to the poor, who were

> exposed to the hazards of disease for the good of the whole. Happily their manner of life and even their hardships are the best means of preserving their health. It is true that this is not universal and many men are doomed to employments more or less directly pernicious

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[97] Ibid.

[98] Ibid.

> to health, but it is necessary for the good of the whole society, and the only compensation the society can make to them is the taking the greatest care of them, in disease and old age.[99]

He also had in mind the ruling classes, "the Statesman and General with their several dependents" who, he argued, were equally restricted in the possibilities of self-regulation. "We must own," he said, "that in the present constitution of human affairs they could not be carried on but by persons who must not only hazard but must even sacrifice both their health and life to the good of the publick."[100]

The "Art of Health" was not possible, therefore, for these classes, but he argued that it was possible for those in the middle ranks of society. Likening the "Art of Health" to the "art of moral prudence," he though it not only possible but necessary that ideas about the preservation of health should be transmitted "to those, who, relieved from servile labour or very assiduous employments have leisure to bestow on the study and are capable of learning the principles of it and of applying these to particular cases and occasions."[101]

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[99] Ibid.

[100] Ibid.

[101] Ibid.

CONCLUSION

The Incorporation of Surgeons in Edinburgh had in the second half of the seventeenth century been patron to the constitutional amalgamation of two medical occupations usually considered separate endeavours--the surgeon and the apothecary. Out of the amalgamation developed an institution--perhaps the only such institution in Edinburgh--offering a training which combined the utilization of intellectual and utilitarian skills towards a morally and economically virtuous end. Moreover, the training carried with it considerable political benefit; apprentices were eligible to become burgesses of the city and freemen of the Incorporation, important political rights in a nation where burghal political power was not inconsiderable in national and burgh politics.

A significant consequence arising out of the amalgamation was a considerable increase in the Incorporation's apprentices. Whether this had been one of the objectives behind the amalgamation, or whether it was a spontaneous affirmation of the amalgamation by Scotsmen with sons to education, is not clear. What is clear is that after the amalgamation of the two occupations in

1657, Scottish gentry increasingly came to consider the Incorporation of Surgeons a responsible guardian of their sons' education. Popular opinion obviously approved of the kind of education offered by masters of the Incorporation.

We do not know a great deal about the surgeon-apothecaries, or the kind of education they conducted. A few impressions cut a clear image. We can see that they were both intelligent and well-educated. The pamphlets they wrote or had written were considerably more articulate than those prepared by or for physicians and apothecaries. They could rise to great eloquence when defining their political and professional liberties, and this brings us to a second clear impression. There is an emotional intensity in their pamphleteering, an impression of righteousness and self-confidence, and an arrogant pride projected into their struggle with the physicians which went far beyond economic motivations. They were not fighting for their economic lives. The amalgamation gave them, they claimed, a more adequate living than could be obtained from either occupation alone, but it did not hold out promises of enormous wealth.

The crusading zeal they brought to their cause sprang from the fact that essentially they were fighting

for a political principle of great professional significance. Surgeon-apothecaries spent an inordinate amount of time and money in courts of law, stretching over a forty-year period from the early 1680's until the middle of the 1720's. The money was spent to reiterate over and over again their irreconcilable hostility to authority unsubstantiated by popularly perceived conceptions of justice; they argued instead for the weight of custom and popular opinion.

The Incorporation's defence of its perception of natural law was fought on two fronts. It argued against unearned political power, objecting to the College's assumption of authority over the affairs of the apothecaries, pitting burgh against royal ordinance. The Incorporation always defended its rights on the grounds of justice perceived in terms of custom, utility, economy and popular demand. It also argued against unearned cultural power, challenging the College's exclusive right to the possession of a body of knowledge which the College claimed enabled men to understand how to practice medicine. Instead, in defining illness and disease, the Incorporation pointed to the need to understand "external" phenomena, to the natural world of tangible, observable forces and to common sense observations about environmental and behavioural circumstances affecting the health of individuals. Although the word does not appear to have been much used,

even by their critics, the surgeon-apothecaries were essentially empirics. They favoured the use of a body of knowledge much more widely understood and used, and communicated in the vernacular.

The tactics of political confrontation failed. The financial drain of continuous litigation killed it, and it was buried by the introduction of the Faculty of Medicine and the establishment of the Royal Infirmary, each of which institution provided the College of Physicians with a significant voice in Edinburgh corporate life. The Incorporation of Surgeons was far too significant an institution in Edinburgh burgh life to die, but between the 1720's and the 1760's it entered a political phase different, and probably inferior to the one it had previously enjoyed.

The medical culture of the surgeon-apothecaries, however, certainly did not die. Although we cannot document it with any precision it seems clear that "external diseases"--incontrovertibly the preserve of surgeon-apothecaries--were assuming a place of some importance in Edinburgh medical education. Boswall tells us that John Innes--who may have been apprenticed to a surgeon-apothecary before taking his Leiden degree--would only lecture on the "external diseases." Precisely what Innes meant by this approach is not known, but we have some clues. Understanding of some kind of relationship

between "external diseases" and the nervous system can be seen in the essay by Crawford entitled "Simpathia". In examinations of surgeon-apothecaries we can see an interest in the gross functions of human beings, in which the sensory organs and the nervous and muscular systems feature; again, suggestions of conceptions featuring "external" rather than "internal" forces.

In the lectures of George Young, moreover, we can see the continuing tradition of surgeon-apothecaries critical of medical knowledge obtained other than through the evidence of external sensory perception; in other words, through empirical observation. The insistence of the Incorporation of the relationship between disease and environment was also kept alive, and flourished, in the increasing importance attached to what was later to be known as "medical topography" and to the environmental and social conditions of regimental troops. Alexander Monro tried to pursue this line of enquiry amongst his colleagues in Edinburgh, without much apparent success. Finally, the study of medical practice became of paramount importance in Edinburgh, through the efforts of Alexander Monro, to a much lesser extent John Rutherford--both of whom had been apprentice to surgeon-apothecaries--and through the popular demand of students, in the Royal Infirmary. All these developments were accompanied by a growing articulation of the didactic power of nature to demonstrate virtuous conduct.

Much of this concatenation of medical doctrine was brought together by William Cullen, probably from the time he began to teach in Glasgow in the early 1740's but certainly after his translation to Edinburgh in 1755. Cullen's use of a nervous pathology was to draw attention to man's relationship to his environment; his use of a sceptical philosophy was to deny the possibility of absolute knowledge of the laws of nature while at the same time leaving the integrity of natural law intact. Instead, he focussed attention on the enquirer; everyone, he argued, had a contribution to make, and everyone's contribution could potentially provide fresh insight.

Cullen's theory of medicine encouraged the integrity of popular judgement and popular action in medical opinion. He wanted to impress on his students the full implications for human self-improvement, particularly through the practice of preventive medicine, implicit in the idea of man's communion with nature. He encouraged informed, lay opinion--the middling ranks--to believe that through the virtues of self-discipline they could to a large extent gain control over the power of disease and illness. Benjamin Rush understood perfectly the political implications of encouraging concepts of health improvement, when he assumed (whether seriously or not we don't know) Cullen's unpopularity with George III "for he ought in justice to his former principles and conduct never to forgive the man that has taught his once ungrateful

Subjects the art of restoring health and prolonging life--perhaps for the purpose of employing both hereafter in lessening his own power."[1]

In the end, then, the purpose of this thesis has been to show that the establishment of a medical school in Edinburgh was not only the work of men like Monro and Drummond, set upon dragging Edinburgh into the eighteenth century. The establishment of the school also owed a great deal to the work of other men, with different ideas about medical organization and about the concept of disease. They represented a cultural branch of Edinburgh medicine which has received less than adequate attention in the past. It was a branch which had a great affinity with popular, empirical ideas about health and how it could be attained, which in turn drew upon cultural imperatives speaking as much to moral as to medical precepts. William Cullen gave these ideas orthodoxy by bringing them within the medical lexicon. Nutrition, exercise, self-regulation as the keys to health and long life were given the authority of medical theory. To understand fully the reasons behind the establishment of the Edinburgh Medical School and its subsequent popularity, it is important to give this cultural branch of Edinburgh medicine greater acknowledgement.

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[1] Thompson/Cullen Papers Rush to Cullen Dec. 22 1784.

APPENDIX I

ORIGINAL FELLOWS OF THE ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH 1681

NAME	FAMILY BACKGROUND	AGE IN 1681	MEDICAL DEGREE
SIR DAVID HAY (-1694)	Physician-in-Ord. to king 1684. Never attended meeting of College. Burgess 1660.	--	
SIR THOMAS BURNETT (1638-1704)	2nd son of Robert Burnet, Lord Crimond. Older brother of Gilbert Burnet. Phys. to Chas. II, Jas. VII, Wm. III and Queen Anne. Succeeded to estate at Crimond 1662.	43	Mont. 1659
MATTHEW BRISBANE (c.1640-1699)	Rector Glasgow Univ. 1677. Town Phys. Glasgow 1682. Fellow Fac. Phys. and Surgeons of Glasgow 1684. Declared hon. member of Edinburgh College 1695.	41	Utrecht 1661
SIR ARCHIBALD STEVENSON (1629-1710)	Son of Rev. Andrew Stevenson, Prof. of Philosophy, Edinburgh College. Family history of militant presbyterianism.	52	Leiden 1660
SIR ROBERT SIBBALD (1641-1722)	Son of David Sibbald, Keeper of Great Seal under 1st Earl of Kinnons 1622-1634.	40	Leiden 1660?
JAMES LIVINGSTONE (-1682	No information.		

SIR ANDREW BALFOUR (1630-1694)	Youngest son of Sir Michael Balfour of Demiln.	51	Caen 1661
ROBERT CRAWFORD (c.1644-c.1699)	Son of Crawford of Crosby. Successor to estate of Nethermains 1678. H.M. historiographer for Scotland until 1682.	c.37	Mat. Leiden 1668
ROBERT TROTTER (c.1648-1727)	Son of Robert Trotter, Advisor and M.P. Only fellow who was apprenticed to a surgeon-apothecary.	c.33	Leiden 1672
MATTHEW SINCLAIR (c.1654-1728)	Son of Sir John Sinclair of Hirdmonston.	c.27	Mat. Leiden 1774
JAMES STEWART (1652-1684)	No information.	29	Mat. Leiden 1674
ALEXANDER CRANSTOUN (-1699)	No information.	--	
JOHN HUTTON ( )	Left Scotland 1682-83.	--	Padua ?
JOHN MCGILL ( )	No information.	--	
JOHN LEARMONTH (c.1656-)	No information.	c.25	Mat. Leiden 1675
WILLIAM STEVENSON, YGR. ( )	No information. Covenanter sympathizer.	--	

JAMES HALKETT (c.1655-1711)	No information.	c.26	Mat. Leiden 1675
WILLIAM WRIGHT ( )	No information.	--	
PATRICK HALYBURTON ( )	No information.	--	
WILLIAM LAUDER (c.1652-1721)	No information.	c.29	Mat. Leiden 1674
ARCHIBALD PITCAIRNE (1652-1713)	Son of Alex. Pitcairne, merchant in Edinburgh and proprietor in Fyfe.	29	Rheims 1680

APPENDIX II

ACTIVE MEMBERSHIP OF THE COLLEGE OF PHYSICIANS - DECEMBER 1696

NAME	DEGREE	AGE IN 1696 [AGE AT ADMITTANCE]	DATE ADMITTED
SIR ARCHIBALD STEVENSON (1629-1710)	Leiden	67 [52]	1681
SIR ROBERT SIBBALD (1641-1722)	Leiden (?)	55 [40]	1681
ROBERT TROTTER (1648-1727)	Leiden	48 [33]	1681
ARCHIBALD PITCAIRNE (1652-1713)	Rheim	44 [29]	1681
SIR THOMAS BURNETT (1638-1704)	Montpelier	58 [43]	1681
MATTHEW SINCLAIR (1654-1728)	-	42 [27]	1681
ALEXANDER CRANSTOUN (-1699)	-	-	1681
JAMES HALKETT (c.1655-1711)	-	c.41 [c.26]	1681
WILLIAM LAUDER (c.1652-1721)	-	c.44 [c.29]	1681
JOHN LERMONTH (c.1656-)	-	c.40 [c.25]	1681
THOMAS SPENCE ( )	-	-	By Mar. 1693
WILLIAM ECCLES (c.1665-1724)	-	c.31 [c.26]	By Mar. 1693
CHARLES OLIPHANT (1666-1720)	-	30 [27]	9.11.1693
ANDREW MELVILLE ( )	Caen	-	5.7.1694
JAMES OR JOHN ROBERTSON (1660-1727)	Rheims	36 [34]	27.9.1694

THOMAS DALRYMPLE (1663-1725)	-	33 [31]	13.7.1694
DAVID DICKSON (1663-1726)	Hardewick	33 [31]	8.10.1694
JOHN SMELHOLME (1669-1743)	-	27 [25]	23.10.1694
GEORGE STIRLING (-1712)	Utrecht & Aberdeen	-	16.10.1694
GEORGE HEPBURN ( )	-	-	15.11.1694
ROBERT CARMICHAEL (1670-1722)	Leiden	26 [24]	3.12.1694
DAVID MITCHELL ( )	-	-	14.9.1695
EDWARD EIZAT (-1728)	-	-	14.9.1695
WILLIAM BLACKADDER ( )	-	-	15.9.1695
GILBERT RULE (1658-)	-	38 [37]	2.10.1695
ADAM FREER (1659-)	Leiden	37 [36]	7.10.1695
ALEXANDER DUNDAS (1664-1732)	Rheims	32 [31]	4.11.1695
JAMES FORREST (1668-1722)	Leiden	28 [28]	20.11.1696

Ref. Minute Books of the Royal College of Physicians of Edinburgh.

R.W. Innes-Smith The English-Speaking Students of Medicine at the University of Leyden Lond. 1932.

APPENDIX III

ACTIVE MEMBERSHIP OF THE COLLEGE OF PHYSICIANS 1715

NAME	DEGREE	AGE IN 1715 [AGE AT ADMITTANCE]	DATE ADMITTED
SIR ROBERT SIBBALD (1641-1722)	Leiden	74 [40]	1681
ROBERT TROTTER (1648-1727)	Leiden	67 [33]	1681
MATTHEW SINCLAIR (1654-1728)	-	61 [27]	1681
WILLIAM LAUDER (1652-1721)	-	c.63 [c.29]	1681
WILLIAM ECCLES (c.1665-1724)	-	c.50 [c.26]	By Mar. 1693
ANDREW MELVILLE ( )	Caen	- -	5.7.1694
JOHN ROBERTSON (1660-1727)	Rheims	55 [34]	27.9.1694
DAVID DICKSON (1663-1726)	Hardewick	52 [31]	8.10.1694
JOHN SMELHOLME (1669-1743)	-	46 [25]	23.10.1694
ROBERT CARMICHAEL (1670-1722)	Leiden	45 [24]	3.12.1694
DAVID MITCHELL ( )	-	- -	14.9.1695
EDWARD EIZATT (-1728)	-	- -	14.9.1695
GILBERT RULE (1658-)	-	57 [37]	2.10.1695
ALEXANDER DUNDAS (1664-1732)	Rheims	51 [31]	4.11.1695
JAMES FORREST (1668-1722)	Leiden	47 [28]	20.11.1696

JOHN RIDDELL (1680-1740)	Leiden	35 [22]	26.11.1702
[JOHN SINCLAIR] (1680-1742)	-	35 [22]	26.11.1702
[JOHN HAY] ( )	Aberdeen	- -	19.11.1702
[JOHN MONRO] (-1724)	Aberdeen	- -	7.1.1704
JOHN DRUMMOND (-1741)	Aberdeen	- -	7.1.1704
[JAMES LUTEFOOT] ( )	Orange	- -	9.2.1704
WILLIAM STEWART (-1737)	St. Andrews	- -	28.7.1704
GEORGE MACKENZIE ( )	-	- -	1.12.1704
FRANCIS PRINGLE (1680-1756)	Leiden	35 [24]	1.12.1704
WILLIAM LEARMONTH (-1750)	Rheims	- -	9.2.1704
THOMAS YOUNG (1673-1743)	Utrecht	42 [34]	12.12.1707
[WILLIAM ALEXANDER] ( )	Rheims	- -	12.8.1707
[JAMES BROWN] (1682-)	Rheims	33 [25]	12.8.1707
ROBERT LOWIS (1686-1754)	Leiden	29 [22]	9.11.1708
JAMES CRAWFORD (1685-)	Leiden & Aberdeen	30 [26]	13.12.1711
NICOLAUS MONTGOMERY ( )	Rheims	- -	5.8.1712
[JOHN MENZIES] (1686-1723)	Utrecht	29 [26]	10.12.1712
WILLIAM ARTHUR (1681-1716)	Utrecht	34 [33]	1.6.1714

[GEORGE PATTIOCH] ( )	Rheims	- -	15.6.1714
JOHN CLERK (1689-1757)	St. Andrews	26 [25]	14.12.1714
[WILLIAM HAMILTON] (1689-)	Hedderwick	26 [25]	14.12.1714
WILLIAM COCHRANE (1687-1749)	Rheims	28 [28]	2.8.1715

Bracketted [ ] names denote very infrequent attendance.

Ref. Minute Books of the Royal College of Physicians of Edinburgh.

R.W. Innes-Smith The English-Speaking Students of Medicine at the University of Leyden Lond. 1932.

APPENDIX IV

MEDICAL DEGREES ISSUED BY UNIVERSITY OF EDINBURGH 1705-1726

May 1705	David Cockburn, A.M. Left for London 1706	Examined by Coll. after request by Carstares.	Licensed by Coll. following grad. Soc.
Dec. 1710	Jonathan Harley	Examined by Coll. after request by Carstares.	No license.
Jan. 1713	Rev. Mr. Caleb Threlkald	Examined by Coll. after request by Carstares.	No license.
Aug. 1713	Charles Melville (c.1661-1726). Surg. in army in Spain 1707. Prac. Montrose	Not examined by Coll.	No license.
Dec. 1713	James Crawford appointed Professor of Physics and Chemistry in the University, by the Town-Council, on recommendation of Principal Carstares.		
Nov. 1717	James Dalgleish, A.M.	Not examined by Coll.	No license.
Nov. 1717	John Quincy	Not examined by Coll.	No license.
Nov. 1718	James Eccles, son of Wm. Eccles, fellow of College of Physicians of Edinburgh	Examined by Coll. after letter from Wishart request two fellows join with Prof. Crawford to examine candidate in library.	Licensed by Coll. 24.3.1719; Soc. Sept. 1719
Mar. 1719	Robert Stoddart, A.M.	Examined by Coll. on request by Crawford.	No license.

Aug. 1719	John Burnet, A.M.	Examed by Coll. on request of Wishart that two of Coll. join with Crawford.	Licensed Aug. 1719 Soc. Aug. 1719
Nov. 1719	John Hamilton, son of Wm. Hamilton, Prof. of Divinity, Edinburgh University	Examined by Coll. on request by Crawford.	No license.
July 1720	?	Not examined by Coll.	No license.
May 1721	?	Not examined by Coll.	No license.
Sept. 1723	Henry Brett, Anglus	Not examined by Coll.	No license.
Mar. 1723	William Wood, A.M.	Examined by Coll. on request of Wishart two of College join with Crawford.	No license.
No. 1723	George Oswald	Not examined by Coll.	Lic. Nov. 1723 Soc. Feb. 1724
Feb. 1724	William Porterfield appointed Professor of Physick by the Town-Council to teach Institutes and Practice of Medicine, on recommendation of College of Physicians.		
Feb. 1724	Alexander Wright	Not examined by Coll.	No license.
Mar. 1724	Aaron Wood, A.M., Anglus	Examined by Coll. on request by Wishart that two of College join with Crawford.	No license.

June 1724	John Nicholl, A.M.	Exam. by Coll. on request by Wishart that two of College join with Crawford.	No license.
Nov. 1724	John Moubray, Scoto-Brit.	Not examined by Coll.	No license.
Apr. 1725	John Gibsone, A.M.	Examined by Coll. on request of Wm. Hamilton that two of College join with Crawford.	No license.

APPENDIX V

MASTERS OF THE INCORPORATION OF SURGEONS 1698-1705

NAME & DATE OF ENTRY	FAMILY BACKGROUND	EDUCATION OTHER THAN APPRENTICESHIP
ADAM GAIRDNER ent. 1661. (ret.1700)	"Of Greenhill." Son-in-law of James Brown, apothecary. Possible brother-in-law of Hugh Brown (q.v.)	Not known.
JAMES NISBET ent. 1662. (ret.1702)	Father of Alexander Nisbet, surgeon-apothecary (q.v.) and of James Nisbet, minister.	A.M., M.D. Angers 1670.
HUGH BROWN ent. 1665. (ret.1700)	Son of Mr. James Brown, apothecary. A Jacobite and Roman Catholic.	
WILLIAM BORTHWICK ent. 1665. (d.1698)	Eldest son of Alexander Borthwick of Gilchristoun. Son-in-law of James Borthwick of Stow, principal architect of the amalgamation of surgeons and apothecaries.	Mat. Leiden 1667.
FRANCIS BORTHWICK ent. 1675. (d.1702)	Son of James Borthwick of Stow. Brother-in-law of Wm. Borthwick (q.v.)	Not known.
THOMAS EDGAR ent. 1677. (d.1703)	Son of John Edgar, indweller in Nedderlie. Son-in-law of Alexander Pennicuik of Newhall.	"Was abroad" before entering.
JOHN RAINOLDS ent. 1678. (ret.1700)	Son-in-law of Robert Kennedy, a former master of the Incorporation.	Not known.
JOHN BAILLIE ent. 1681.	Not known.	Not known.

JAMES BROWN ent. 1681.	Son of Mr. Wm. Brown of Logane.	Not known.
JAMES MUIRHEAD ent. 1683. (d.1702)	Not known.	Not known.
THOMAS HENDERSON OR HENRYSON. ent. 1672.	Son of Lawrence Henderson, merchant. Uncle of Dr. Thomas Spence, fellow of the Royal College of Physicians.	Not known.
WALTER PORTERFIELD ent. 1684.	Son of Mr. Walter Porterfield of Comistoun.	Not known.
THOMAS GIBSON ent. 1686.	Not known.	Not known.
HUGH PATERSON ent. 1688.	Son of Andrew Paterson, indweller in Fiers. Son-in-law of Laurence Oliphant of Gask, a Jacobite.	
GIDEON ELIOT ent. 1689.	Son of Thomas Eliot of Berlie. Surgeon to Cameronians 1689-1692.	Mat. Leiden 1686.
ROBERT CLERK ent. 1689.	Younger brother of Sir John Clerk of Penicuik. Son-in-law of Hugh Brown (q.v.) Father of Dr. John Clerk, fellow of the Royal College of Physicians.	Educated by tutor at home.
JOHN HAY	Son of Mr. Alexander Hay, Apothecary to His Majesty. Possibly the same Dr. John Hay who became a fellow of the Royal College of Physicians in 1702.	A.M., perhaps M.D.

JOHN KING ent. 1690. (d.1701)	Son of John King of Logan.	Not known.
ALEXANDER MONTEITH ent. 1695.	Son of James Monteith of Auldcathie, branch of Earls of Monteith. Jacobite family. Son-in-law of Gen. Dalyell.	"Was abroad" before entering.
JAMES AUCHINLOCH ent. 1691.	Son of a writer in Perth. Son-in-law of an advocate.	Not known.
ARCHIBALD FISHER ent. 1694.	May have been barber and periwig maker before entering.	Not known.
THOMAS DUNLOP ent. 1695.	Son of James Dunlop of Carinkirk.	Mat. Leiden 1690.
DAVID FYFE ent. 1695.	Son of Patrick Fyfe, merchant.	Not known.
THOMAS VEITCH ent. 1695.	Son of Mr. Thomas Veitch, advocate.	Not known.
JAMES HAMILTON ent. 1695.	Son of Mr. William Hamilton of Whytkirk, Minister.	Not known.
GEORGE KIRKTON ent. 1696. (d.1702)	Son Mr. James Kirkton, minister in Edinburgh.	Not known.
JOHN CHEYNE ent. 1696.	Son of George Cheyne, Town-clerk in Leith.	Not known.
ROBERT ELIOT ent. 1696.	Son of Robert Eliot, Minister in West Linton.	Mat. Leiden 1691.
ALEXANDER EDGAR ent. 1697.	Provost of Haddington.	Not known.

ROBERT SWINTOUN ent. 1699.	Son-in-law of Thomas Edgar (q.v.)	Not known.
GEORGE DUNDAS ent. 1699.	Not known.	Not known.
ALEXANDER NISBET ent. 1700.	Son of Dr. James Nisbet (q.v.)	Not known.
HENRY HAMILTON ent. 1700.	Son of Sir Robert Hamilton of Presmannan & Senator of College of Justice.	Went abroad "for the further improvement of the said airts."
ANDREW MURRAY ent. 1701.	Had been apothecary before entering the Incorporation.	Not known.
ROBERT CAMPBELL ent. 1701.	Surgeon to H.M. Reg. of Guards.	Not known.
ARCHIBALD PITCAIRNE ent. 1701.	Son of Mr. Alexander Pitcairn, merchant. Of old Fyfe family. Prof. of Medicine, Edinburgh University in 1685. Professor of Medicine, Le den University in 1692-93.	M.A. Edin. 1671. M.D. Rheims 1680. M.D. Aberdeen 1699.
JOHN MIRRIE ent. 1701.	Not known.	Not known.
JOHN JOSSY ent. 1702.	Son of John Jossy, apothecary.	"Went abroad for his further education for several years."
THOMAS INGLIS ent. 1702.	Not known.	Not known.

WALTER POTTER ent. 1702.	Son of Michael Potter, Minister.	Not known.
JAMES PRINGLE ent. 1703.	Had been apothecary before entering.	Not known.
JOHN MONRO ent. 1703.	Son of Alexander Monro of Bearcrofts. Father of Alexander Monro, Professor of Anatomy, Edinburgh University.	Mat. Leiden 1692.
JOHN KNOX ent. 1703.	Had been apothecary before entering.	Not known.
GEORGE BORTHWICK ent. 1704.	Son of Alexander Borthwick of Falahill, Soutray.	Not known.
HENRY HEPBURN ent. 1705.	Son of David Hepburn of Humbie.	Not known.
JAMES NISBET ent. 1705.	Had been apothecary before entering.	Not known.

Principal Sources

Minute Books of the Royal College of Surgeons of Edinburgh.

R.W. Innes-Smith The English-Speaking Students . . . of Medicine at the University of Leyden Lond. 1932.

Scottish Record Society Pub. Vols. 67-69 Roll of Edinburgh Burgesses.

Scottish Record Society Pubs. Vols. 28, 60, 61 and 92 Register of Apprentices in the City of Edinburgh.

APPENDIX VI

MASTERS OF THE INCORPORATION OF SURGEONS 1696-1730

Gentry	14
Advocates & Senators	3
Writers, W.S.	4
Ministers	6
Medical	16
Military	1
Civil Clerks	1
Merchants	6
Burgesses	3
No information	33
TOTAL	87

Principal Sources

Minute Books of the Royal College of Surgeons of Edinburgh.

R.W. Innes-Smith The English-Speaking Students . . . of Medicine at the University of Leyden Lond. 1932.

Scottish Record Society Pub. Vols. 67-69 Roll of Edinburgh Burgesses.

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APPENDIX VII

APPRENTICES OF THE INCORPORATION OF SURGEONS 1696-1730

Gentry	74
Advocates & Senators	8
Writers, W.S.	7
Professors, teachers, lecturers	3
Ministers	16
Medical	5
Military	4
Civil Clerks	4
Chamberlains	3
Merchants	8
Burgesses	3
Craftsmen	2
Farmers	1
No information	426
TOTAL	564

Principal Sources

Minute Books of the Royal College of Surgeons of Edinburgh.

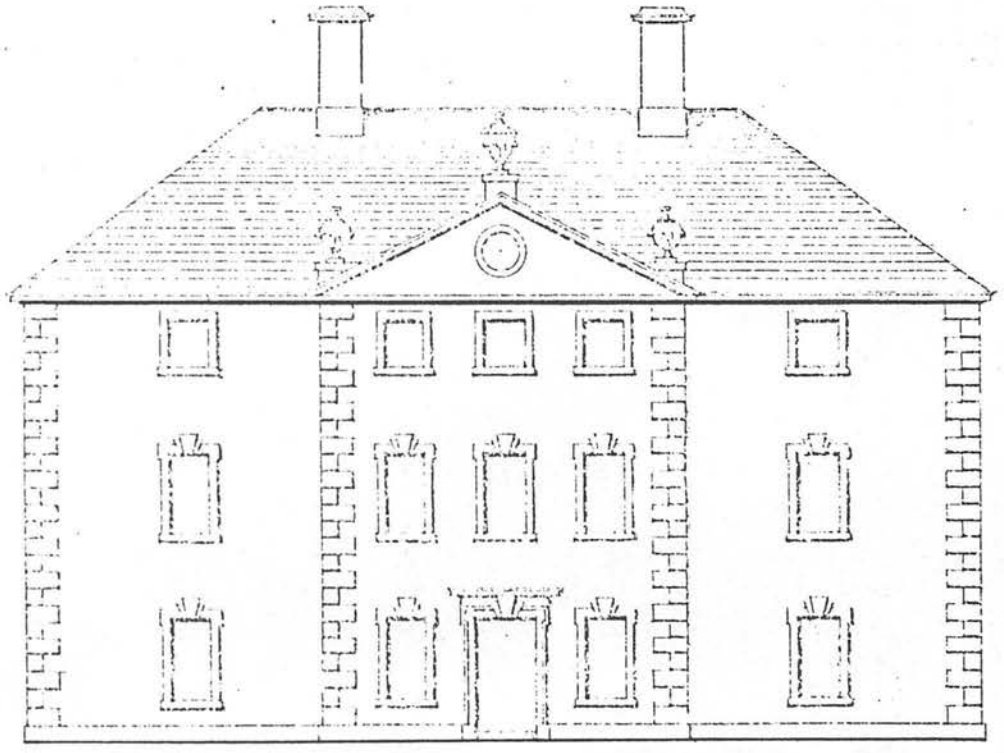
R.W. Innes-Smith The English-Speaking Students . . . of Medicine at the University of Leyden Lond. 1932.

Scottish Record Society Pub. Vols. 67-69 Roll of Edinburgh Burgesses.

Scottish Record Society Pubs. Vols. 28, 60, 61 and 92 Register of Apprentices in the City of Edinburgh.

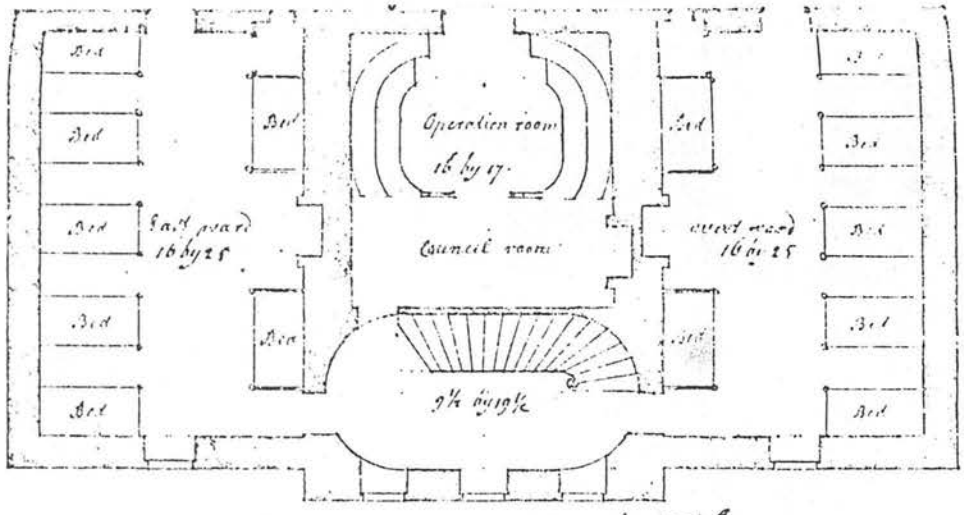
APPENDIX VIII

PLAN OF SURGEONS' HOSPITAL

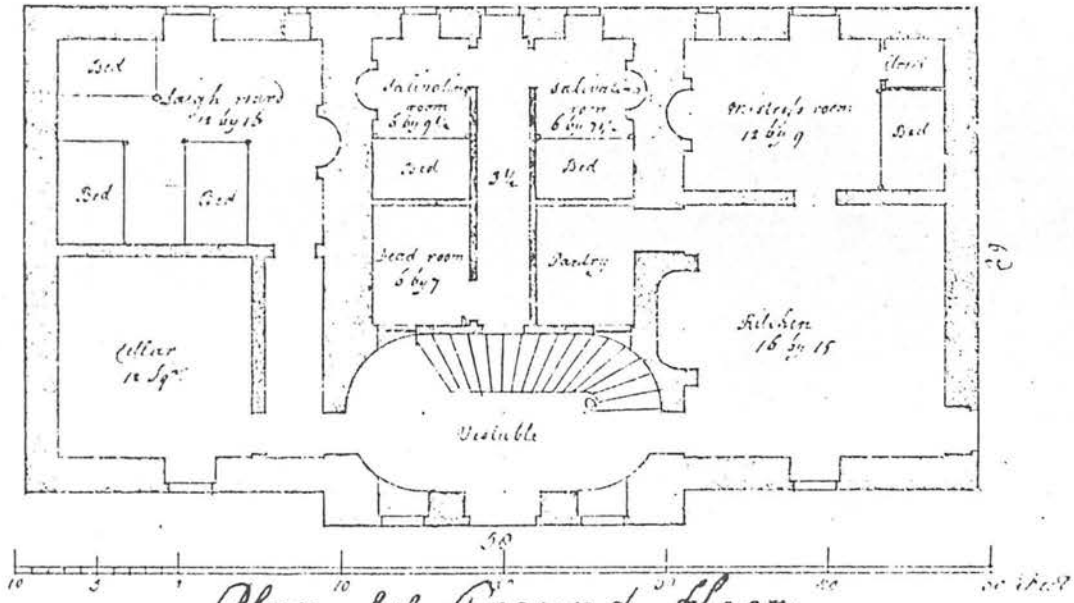


North Front

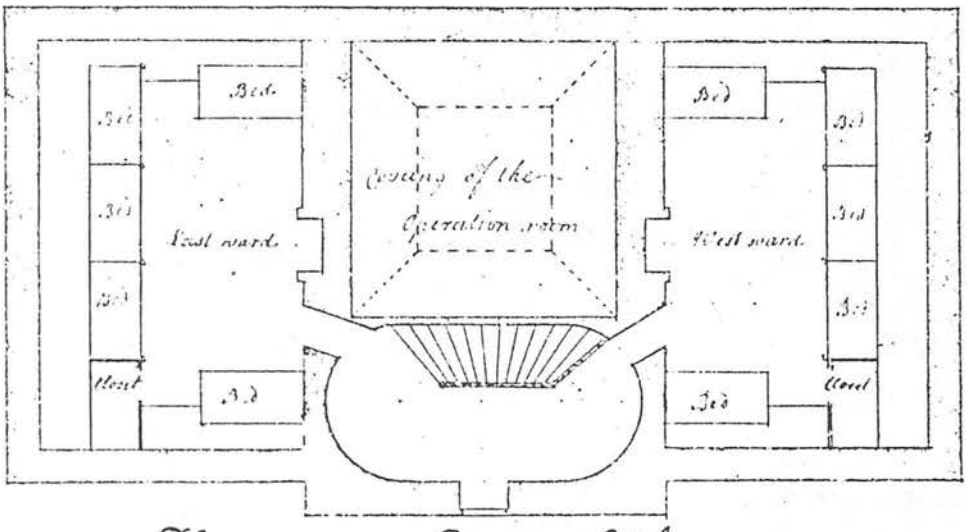
Edinb.r 10th May 1738
This is the Scheme of the Surgeons Hospital
to which the Warrand of the Gild Court of this date relates
James Clerk



Plan of the Second Floor
9 feet high



Plan of the Ground Floor
9 feet high.


Bed
Bed
Bed

APPENDIX IX

LECTURES ON THE MATERIA MEDICA

BY

WILLIAM CULLEN [pub. 1773 without permission of Cullen.]

INTRODUCTION. - Discussion of physiology, temperament, custom. pp. 1-44

A. SUBSTANCES ACTING ON THE SIMPLE SOLIDS

I. Nutrentia - "everything used by mankind in their daily food . . . more strictly . . . such substances as are fitted by the vital power to be converted into our fluids and solids, in order to sustain their growth and repair their daily waste."

Fruits
Vegetables
Nuts
Farinaceous seeds
Condiments
Drink
Animal Food pp. 45-150

MEDICINES - Introduction. Methodology. Virtues of organization. Discussion and rejection of other methods of investigating virtues of plants - smell, taste, chemical properties. Proper methodology by establishing their effect on human economy. pp. 151-169

II. Adstringentia - "such medicines as increase the cohesion of the particles of the simple solids and so renders them more dense [or] . . . everything that gives strength and stops evacuations that are supposed to proceed from laxity." (p. 33) Also called Constringents, Styptics, Tonics, Roborants. (p. 170)

i) Fossil adstringents - lead, iron, alum.
ii) Vegetable adstringents - acid. pp. 169-222

III. Emollienta - "such medicines as diminish the cohesion of the simple fibres." (p. 222) i.e. laxatives. pp. 222-232

B. SUBSTANCES ACTING ON THE VITAL SOLIDS

IV. Stimulantia - "such medicines as excite the action of the moving fibres in living animal bodies. On the dead body they have no operation. Whatever excites motion in an animal body, is a Stimulus; Medicines, which have this effect, are called Stimulents: (p. 233)

i.e. Peruvian bark (pp. 287-302)
Wine (pp. 309-318) pp. 233-323

V. Sedativa - "such substances as diminish motions in the system, and the force of the moving power." (]. 323)

i.e. opium (pp. 331-351) pp. 323-360

VI. Antispasmodica - "such medicines as are suited to take off spasms or irregularity of motions." (p. 361) pp. 360-386

C. SUBSTANCES ACTING ON THE FLUIDS

Introduction. pp. 387-405

ALTERENTIA - "medicines which produce changes in circulating fluids, and are reckoned of two kinds, as they operate on the consistency or mixture of our fluids." (p. 33)

VII. Attenuantia - (thinning fluids).

i.e. water (pp. 406-410) pp. 405-414

VIII. Inspissantia - (thickening fluids). pp. 414-416

IX. Demulcentia - Correcting acrimony. pp. 416-420

X. Antacida - Correcting acrimony. pp. 420-430

XI. Antalkalina - Correcting acrimony. pp. 430-437

XII. Antiseptica - Correcting acrimony. pp. 437-438

EVACUANTIA - "those medicines which increase the excretion of fluids to be thrown out of the body." (p. 34) pp. 438-505

XIII. Errhina - Increase mucus of the nose.

XIV. Sialagoga - Increase mucus of the nose and saliva.

XV. Expectorantia - Increase mucus by the bronchia.

XVI. Emetica - Those which evacuate the stomach.

XVII. Cathartica - Those which evacuate the stool.

XVIII. Diuretica - Those which increase evacuations of urine.

XIX. Diaphoretica - Increase evacuations of surface of body.

XX. Menagoga - Medicines which promote menstrual flow. Term also for haemorrhoids in men and lochias in women.

APPENDIX X

LECTURES ON PATHOLOGY

BY

WILLIAM CULLEN c.1766-1773

PART I INTRODUCTION pp. 1-54

In which Cullen discussed:

Definition of Disease.
General notion of health.
Standard of Health.
Doctrine of Cause and Effect.
Definition of proximate cause.
Outline of steps of causation.
Definition of remote cause.
Definition of predisposing and occasional causes.

PART II SIMPLE SOLIDS pp. 54-58

Outline of pathology consisting of excess or defect of general properties.

PART III VITAL SOLIDS pp. 59-62

Introduction consisting of:

Definition of Nervous Diseases.

Pathology of functions of nervous system -
i.e. Loss of functions of sense and motion.

General Plan - Deviations from health considered in relation to three different parts of the nervous system, each part considered under two heads - Sense and Motion.

A. Different States of Sentient Extremities pp. 62-64

Definition of Sensibility.

a) Causes of Sensibility in excess or defect pp. 65-91

i) Difference of medium.
ii) Conformation of original stamina.
iii) Different states of tension in medullary substance.
iv) Temperature.
v) Custom and habit.
vi) State of brain (tone of mind).
vii) Direct application of stimulus.

b) State of Extremities giving errors or depravity of sense pp. 92-105

i) Perceiving objects when none there. (Imagination).
ii) Perceiving objects other than really are.
iii) Perceiving objects in altogether singular way.

B. Different States of Moving Extremities or Muscular Fibres pp. 106-109

Definition of Vigour and Mobility.

Excess of Vigour - Increased Tone.
Defect of Vigour - Debility.

Excess Mobility - Irritability.
Defect of Mobility - Torpor.

a) Causes of Vigour in Excess or Defect — pp. 110-125

i) State of simple solid.
ii) Bulk of muscle.
iii) State of tension.
iv) Agents of excitement or collapse applied directly.
v) Exercise.
vi) State of Brain.

b) Causes of Mobility in Excess or Defect — pp. 126-136

Distinction between mobility and sensibility.

i) Sensibility.
ii) Debility.
iii) Excitement.
iv) Habit.
v) State of Brain.

C. Different States of the Brain — pp. 137-151

a) Causes of Sensibility in Excess or Defect

i) As brain more or less free. (unrestricted)
ii) As brain more or less excited.
iii) Greater distension of vessels of brain.
iv) Several causes of attention.
v) Habit.

b) State of Brain giving errors or depravity of Sense — pp. 146-152

i) Perceiving objects when none there. (Imagination).
ii) Perceiving objects other than really are. (False judgement)
iii) Perceiving objects in altogether singular say. (Idiosyncracies).

c) Causes of Vigour in Excess or Defect pp. 153-170

i) Original stamina.
ii) State of simple solid.
iii) Exercise.
iv) Temperature.
v) Tension.

d) Causes of Mobility in Excess or Defect pp. 171-192

i) Sensibility.
ii) State of mind.

PART IV FLUIDS pp. 193-350

a) Cohesion. Most universal quality.
Excess or Defect.

Balance maintained by body.

Cannot conclude from state of aliment the state of blood.

b) System of animal functions.

Balance between functions of assimilation and excretion.

APPENDIX XI

NOTES ON CULLEN'S THERAPEUTICS

Cullen's programme for combatting two of the most common illnesses--fever and hypochondria--demonstrate how his general principles were applied to particular cases.

Pyrexia, or febrile diseases, was the term embracing all the known classes of fever; continuing, remittant and intermittant. The fundamental causes of these fevers, Cullen taught, was either miasmata (external bodies in the atmosphere), contagion, cold or fear, and possibly intemperance or venery. Any of these causes could induce a cold stage of debility which, if severe enough, would induce in the system a reaction, or spasm, creating hypertension (or inflammatory diathesis) particularly in the sanguiferous (vascular) system. This hypertension, had to be countered by an anti-phlogistic regimen, which involved

i) avoiding sensation, chiefly light and noise
ii) avoiding exercise of the body and mind
iii) rendering the aliment both in respect of quantity and quality as little irritant as possible
iv) supporting the excretions, as their retention is irritant

This programme was Cullen's most fundamental therapeutic remedy. It was augmented by his belief that all motion in the body generated its own automatic response by a contrary motion. "Any power," he said, "exciting the nervous system more considerably is followed by a proportional Degree of Collapse and when the excitement is

to a certain degree the Collapse may be fatal." The effect of exercise on the body, he felt, was a perfect example. A due amount was very beneficial, but too much induced collapse.

> Such is the constitution of the Excitement of the nervous system that every unusual degree of excitement is attended with a like degree of collapse, and that such is the natural course of the animal oeconomy so that we can see the necessity of the alternate states of action and rest, and we presume that they induce one another.

Disregard of these "alternate states of action and rest" which nature demanded was the basis of diseases of the mind, the most common of which was hypochondria, or "vapours." This illness was chiefly characterized by "a languor, listlessness, or want of resolution and activity with respect to all undertakings; a disposition to seriousness, sadness and timidity; as to all future events, an apprehension of the worst or most unhappy state of them. . . . In respect to all these feelings and apprehensions, there is commonly the most obstinate belief and persuasion." Hypochondria was most frequently accompanied by a particular state of mind which Cullen termed "the melancholic temperament." Such a person, he said, was slow to receive impressions, but once received these impressions were particularly tenacious. Persons of a melancholy temperament were "remarkable for their constant attachment to one object, to one research: they are persons who have produced some of the greatest improvements in science; they have

particularly furnished us with some of the best facts and experiments . . ."

Treatment of this condition should proceed upon two fronts. Because vapours was "like every other state of mind, connected with a certain state of the body," then recourse must first be had to amending that state of the body, which usually incorporated some form of "dyspepsia." This was largely a spasmodic affection of the stomach, the proximate cause of which was some change in the quality or quantity of the digestive fluid (for which he had no explanation) and the remote causes of which were stimulating substances such as tea, coffee, tobacco, "ardent spirits," opium, etc., over-eating, indolence of mind and body, intense study, excess venery or frequent intoxication.

The treatment of the mind, however, was "the most important article of our practice in this disease," and for this Cullen believed the cure lay in "the interruption of his attention, or upon its being diverted to other objects than his own feelings." Men should not be drawn, Cullen believed, from "that occupation of business suitable to their circumstances and situation in life," but intense occupation, and in particular intense application to study, should be avoided. The natural tendency of the melancholic temperament being to attach itself to one object, this should be "industriously avoided." Cullen realized that this might prove difficult in "occupations upon which a man's fortune depends . . . and more particularly where such

occupations are exposed to accidental interruptions, disappointments and failures." Nevertheless, he believed it essential, because "the very application is an aggravation to the disease . . ." For this illness Cullen prescribed any moderately-pursued exercise, preferably out-doors to remove the person from familiar objects, cardplaying, and relaxing amusement such as listening to music.

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